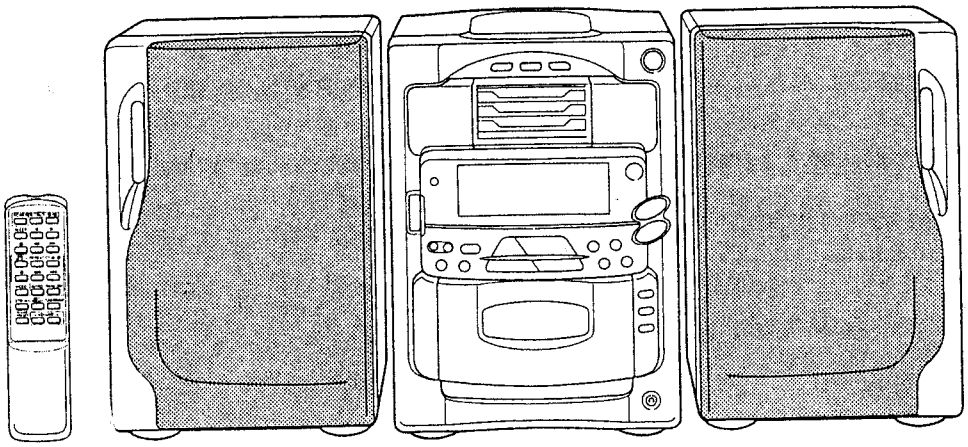
SANYO

FILE NO.

Service Manual

Micro CD Hi-Fi System

DC-MS5 (XE) (UK)



Specifications

PRODUCT CODE No.
129 475 00 (UK)
129 475 01 (XE)

Note: The below mentioned specifications are mainly based on the IHF measurements standard. They can therefore not directly be compared with specifications based on the DIN standard or other standards.

TUNER SECTION

Reception frequency	FM : 87.5 - 108.0 MHz MW : 522 - 1,611 kHz LW : 144 - 288 kHz

CASSETTE DECK SECTION

Track system	4 track, 2-channel stereo
Frequency response	50 Hz - 14,500 Hz (CrO2 type) 50 Hz - 13,500 Hz (Normal type)
Signal to noise ratio	60 dB (Dolby NR ON)
Wow & Flutter	0.12 % (WRMS)
Tape speed	4.75 cm/sec
Fast forward and rewind time	Approx. 110 sec. (C-60)

CD PLAYER SECTION

Type	Changer, 3-disc
Channels	2-channel stereo
Sampling frequency	44.1 kHz
Pick-up	Optical 3-beam semiconductor laser
Laser output	0.6 mW (Continuous wave max.)
Wave length	790 nm
Frequency response	20 Hz - 20,000 Hz
Wow & Flutter	Below measurable limits

AMPLIFIER SECTION

Output power	20 W x 2 (at 4 ohms, 10% distortion)
Sound preset	Four electronic presets
Inputs	VIDEO IN : 400 mV/50k ohms
Outputs	SPEAKER : 4 ohms PHONES : 8 - 32 ohms
Power requirements	AC : 230 V, 50 Hz
Power consumption	75 W
Dimensions (WxHxD)	Approx. 180 x 260 x 288 mm
Weight	Approx. 5.7 kg

SPEAKER SYSTEMS

Type	2 way bass reflex
Unit used	Woofer: 10 cm cone type Tweeter : piezoelectric
Maximum power-handling capacity	40 W (peak)
Nominal impedance	4 ohms
Dimensions (WxHxD)	Approx. 165 x 260 x 215 mm
Weight	Approx. 1.7 kg (per speaker)

Specifications subject to change without notice.

This service manual consists of "DC-MS5U"(main unit), "RB-MS5" (remote control), "SX-MS5" (speaker system) .

REFERENCE No. SM580567

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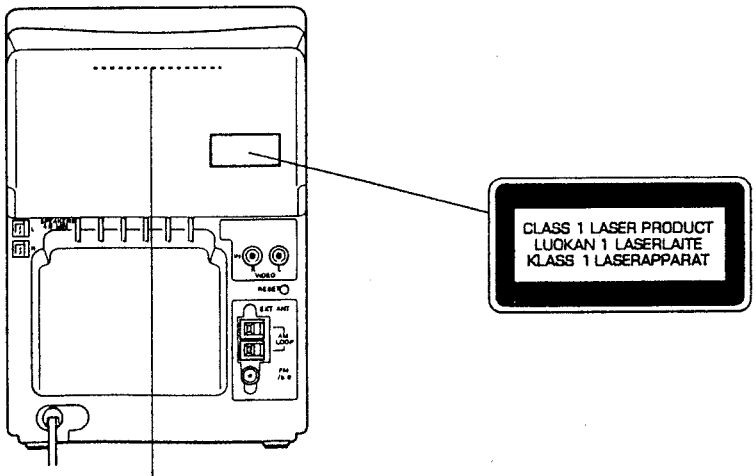
LASER BEAM SAFETY PRECAUTIONS

- Pick-up that emits a laser beam is used in this CD player.

CAUTION :
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

LASER OUTPUT ..... 0.6 mW Max. (CW)
WAVELENGTH ..... 790 nm



CAUTION – INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL – USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDS ÆTTELSE FOR STRÅLING.
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VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersätellylle. Älä katso äteeseen.

2070

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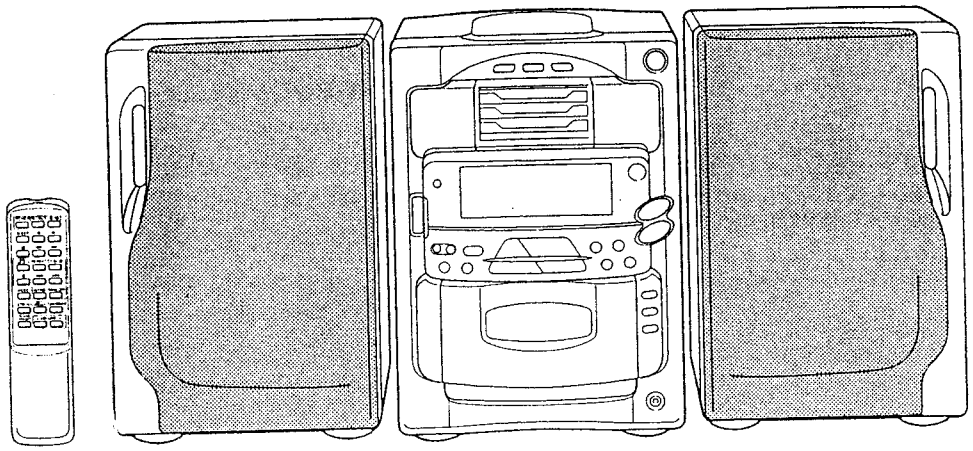

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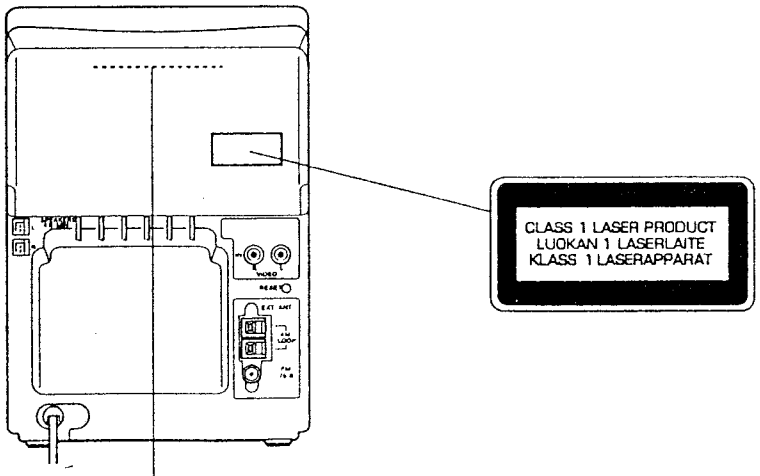

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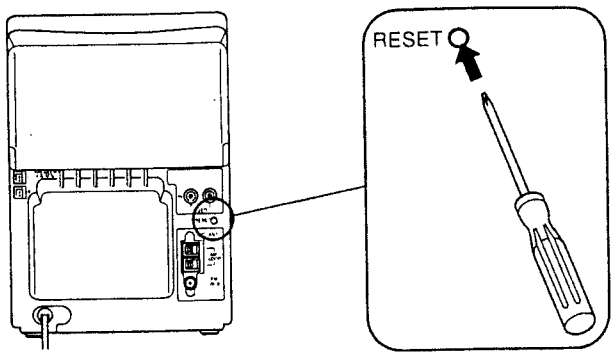
VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso äteeseen.

WHAT TO DO IF

If the operation of the unit or display is not normal, or you wish to clear the contents of the memory.

1. Disconnect the power cord's plug from the electrical outlet.
2. Press the **RESET** button for at least **30** seconds.
3. Connect the power cord.
4. Press the **POWER** button to turn the power on.

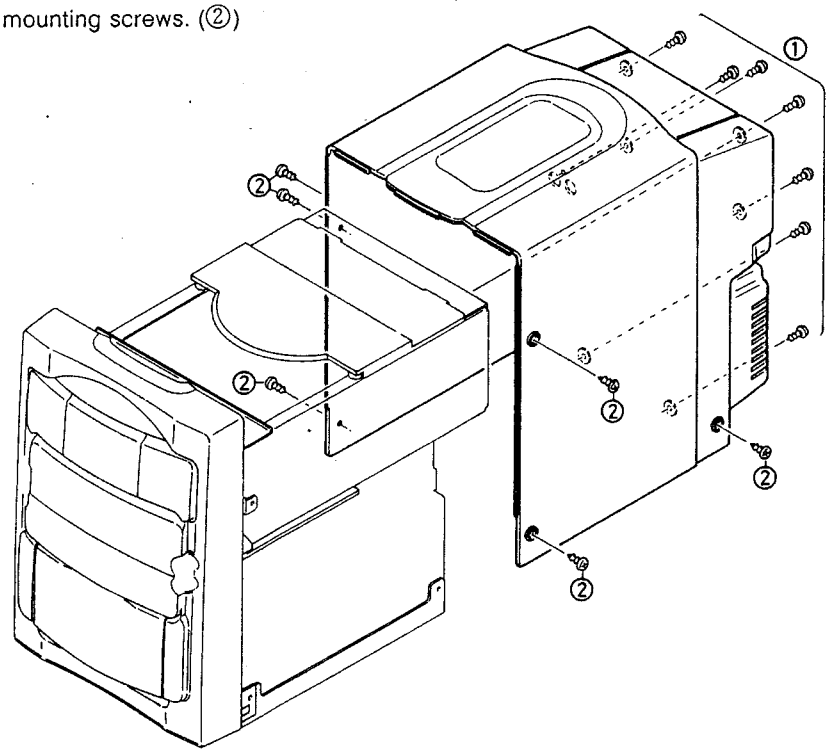


REMOVAL AND INSTALLATION

- Disconnect the power cord's plug from the electrical outlet.
- All wiring should be returned to the original position after work is completed.
- First have ready many the new FIXERS (614 129 2496) for replacement.
- Arrange the lead wires so that they are not near the heat sink.

a. CABINET

(1) Remove the 7 rear panel mounting screws. (①)
(2) Remove the 6 cabinet mounting screws. (②)

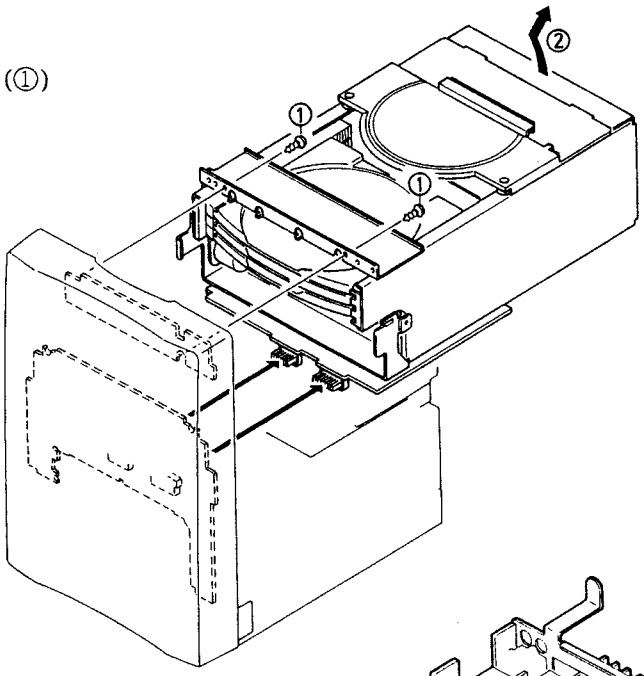


REMOVAL AND INSTALLATION

b. CD BLOCK

(1) Remove the 2 CD mechanism mounting screws. (①)

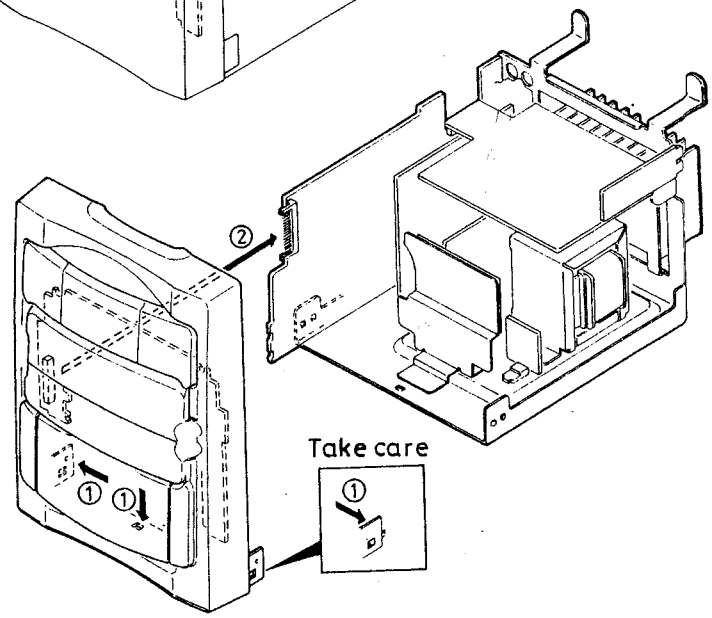
(2) Remove the CD mechanism. (②)



c. FRONT PANEL & PRE-AMP. P.W.BOARD

(1) Remove the front panel. (①)

(2) Remove the connector. (②)

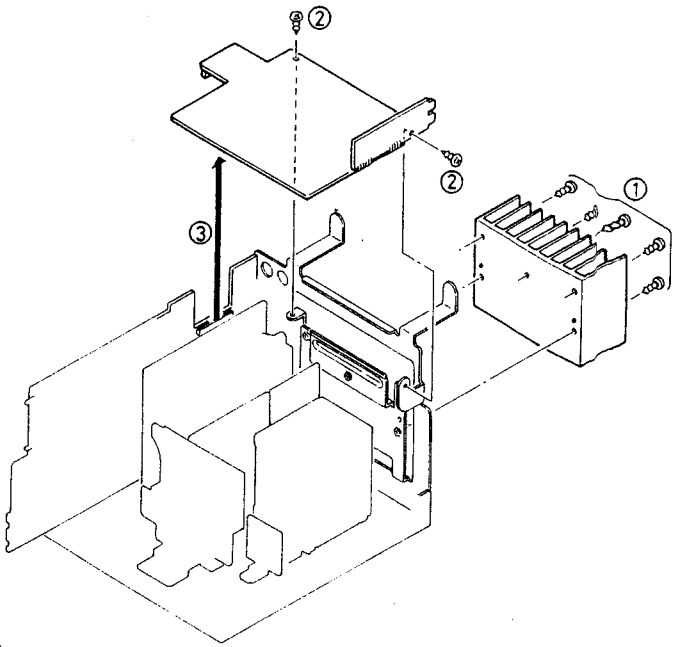


d. POWER AMP. & SPEAKER TERMINAL P.W.BOARD

(1) Remove the 5 heatsink mounting screws. (①)

(2) Remove the POWER AMP. P.W.Board mounting screws. (②)

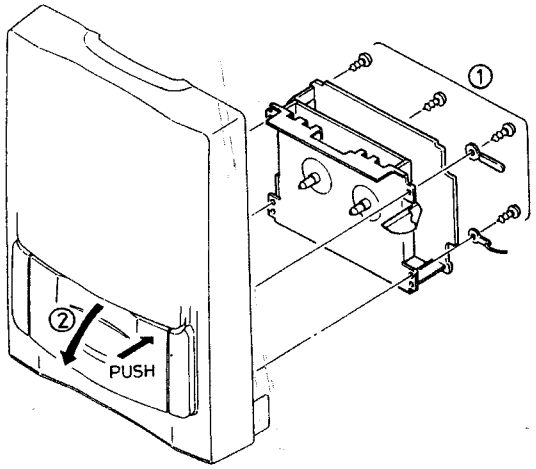
(3) Remove the connector. (③)



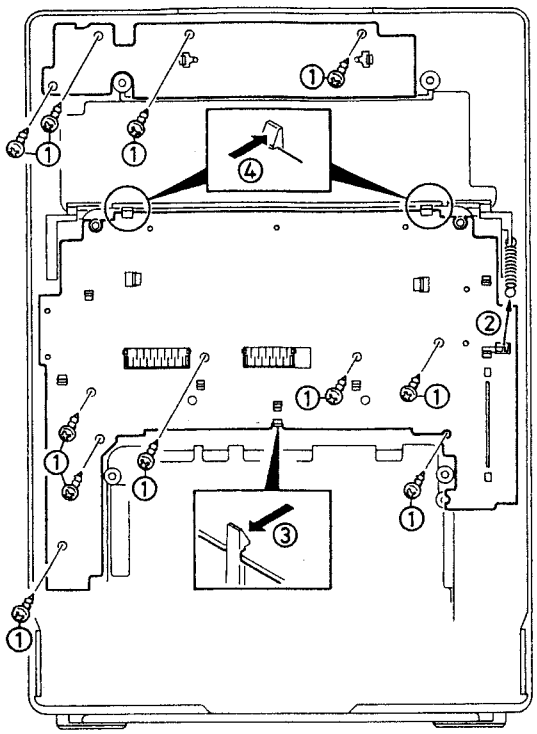
REMOVAL AND INSTALLATION

e. TAPE MECHANISM

(1) Remove the 4 tape mechanism mounting screws. (①)
(2) Open the cassette compartment lid. (②)
(3) Remove the mechanism.



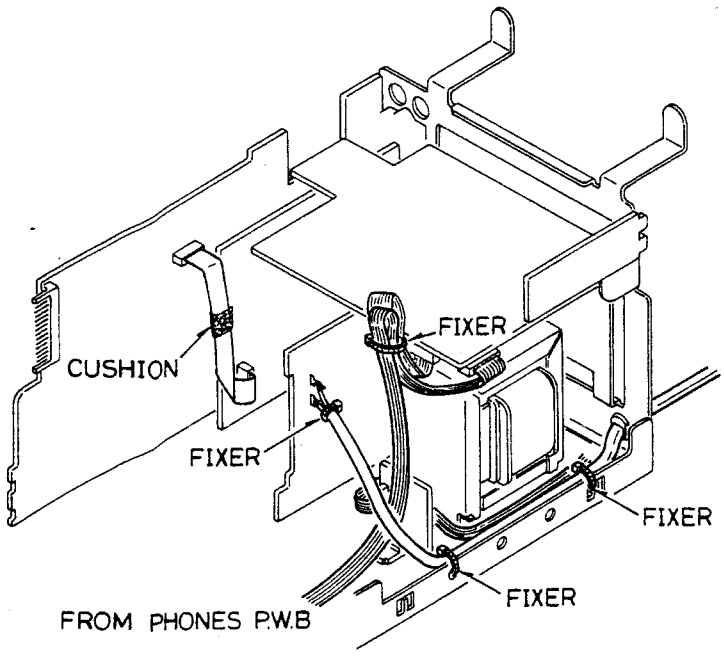
f. FRONT P.W.BOARD



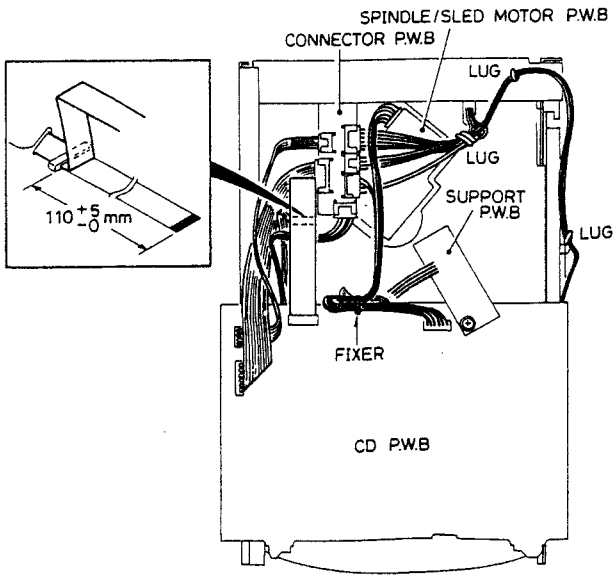
g. WIRING LAYOUT

(a) POWER TRANSFORMER

- Arrange the lead wires so that they are not near the heat sink of the POWER AMP. P.CW.Board.



(b) CD MECHANISM & CD P.W.BOARDS

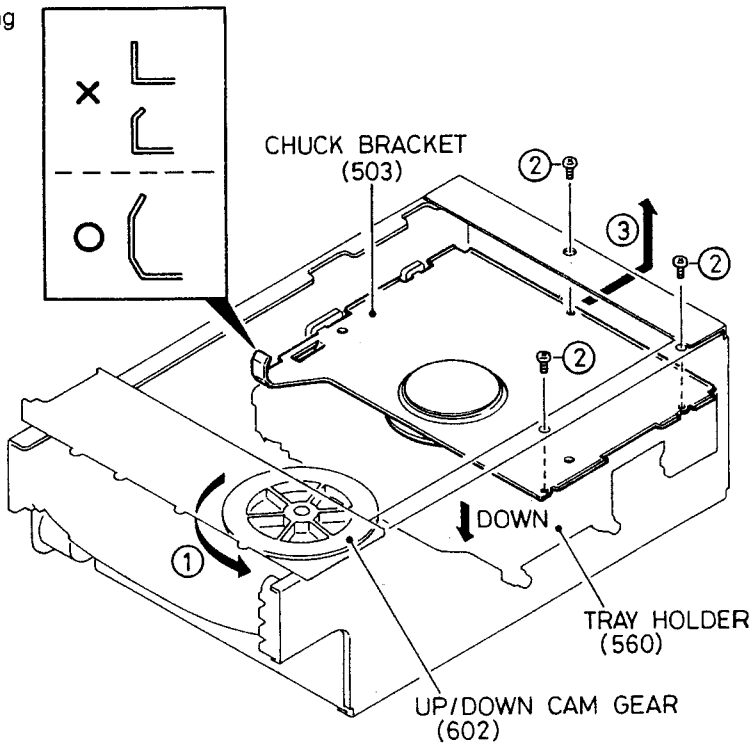


REMOVAL AND INSTALLATION

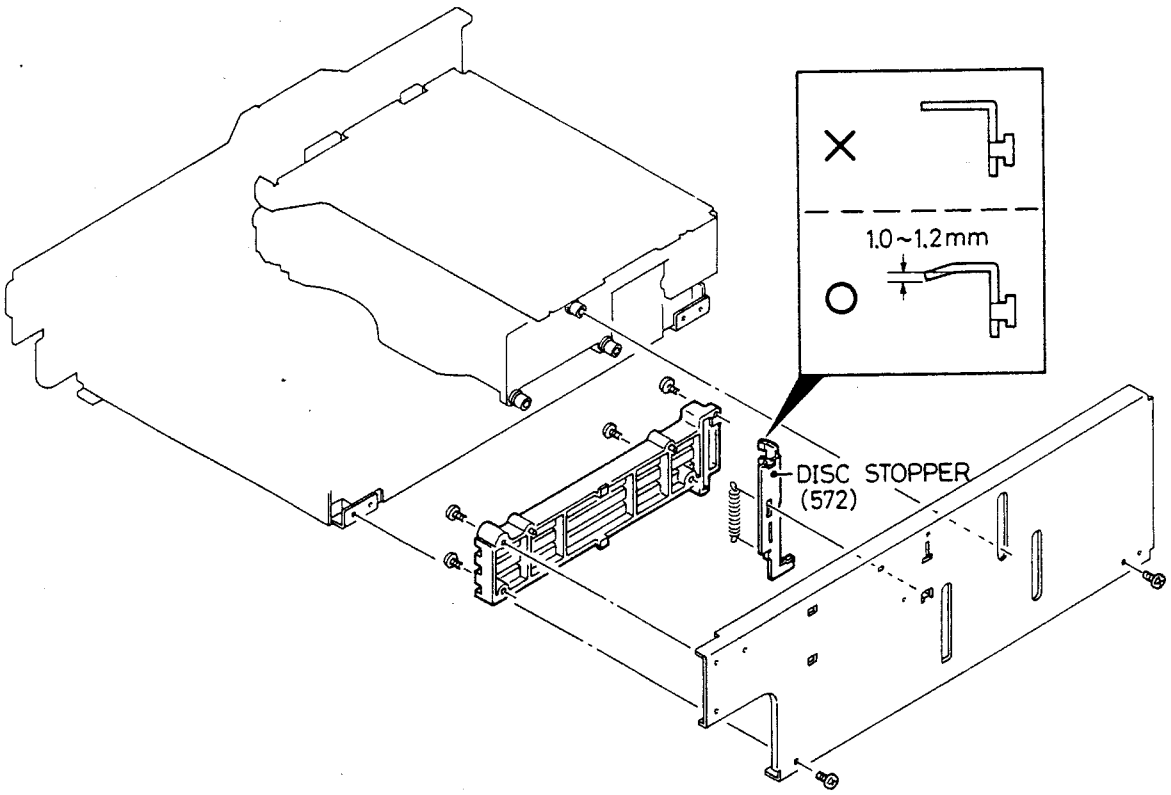
h. CD CHANGER MECHANISM

(a) CHUCK BRACKET (503)

(1) Rotate the UP/DOWN CAM GEAR (602). (①)
(2) Remove the 3 CD changer mechanism mounting screws. (②)
(3) Remove the chuck bracket. (③)



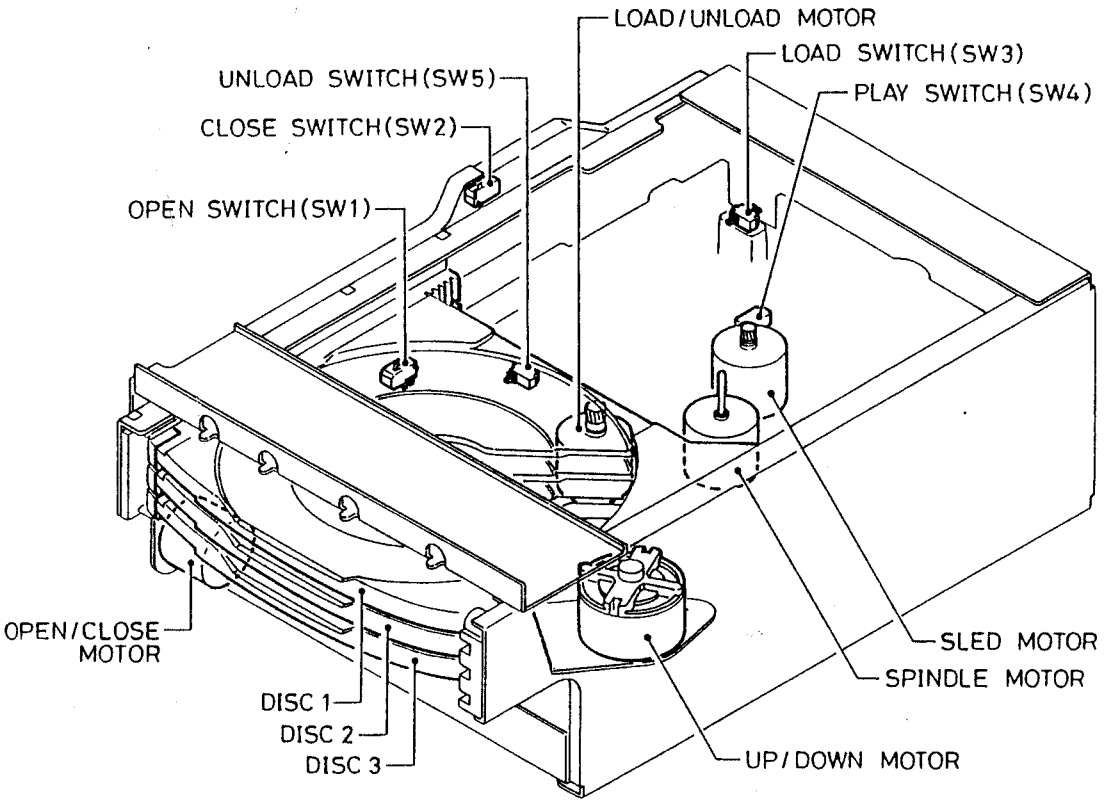
(b) DISC STOPPER (572)

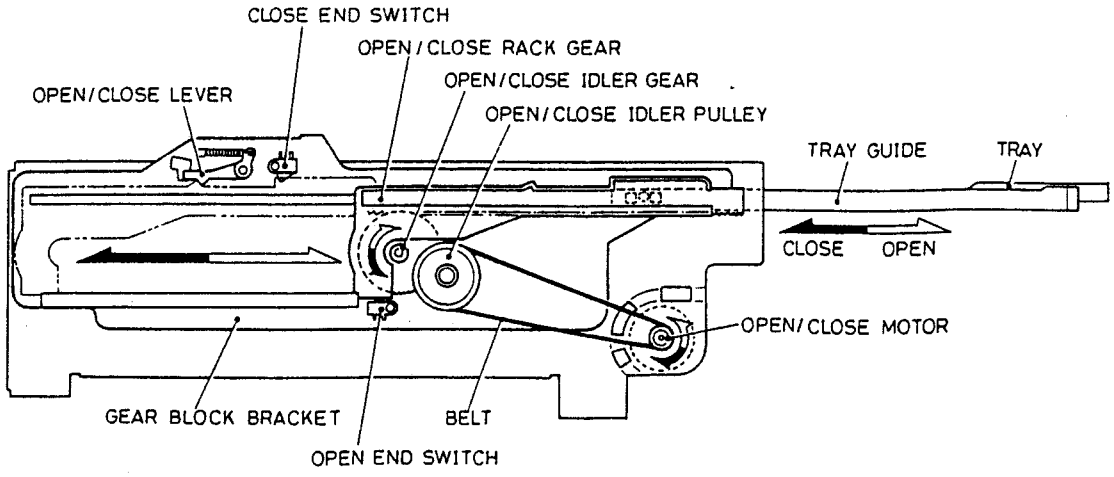


CD CHANGER OPERATION DESCRIPTION

- This set is capable of stocking and playing up to 3 CDs.
- While playing a CD, other discs can be replaced.
  In this case, press the button for the disc No. you wish to remove, and then press the OPEN/CLOSE button.
- When the "POWER" button is turned off, the power turns off after the discs are loaded in the disc trays.

a. MOTOR & MECHANISM SWITCHES LAYOUT



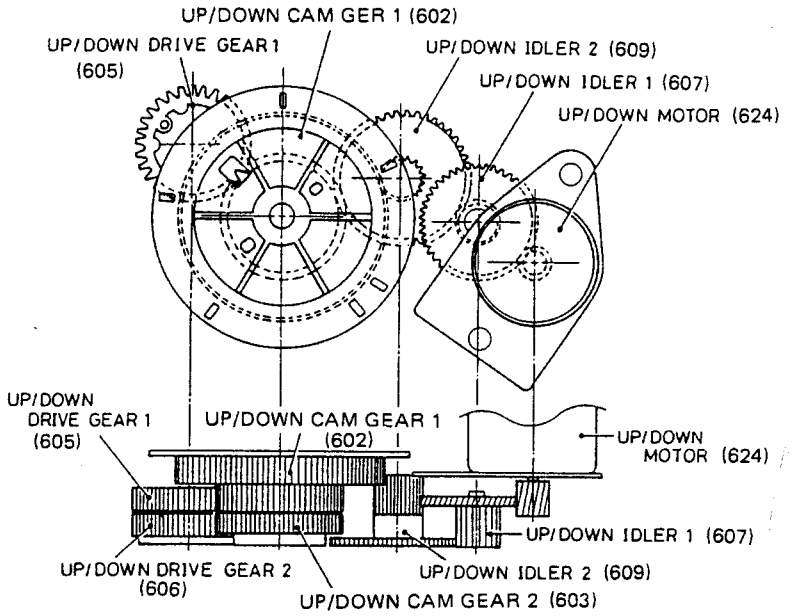


CD CHANGER OPERATION DESCRIPTION

b. UP/DOWN FUNCTION (DURING "UP")

(1) The rotation of the UP/DOWN MOTOR (624) rotates the UP/DOWN DRIVE GEAR (605) in the counter-clockwise direction.

(2) In connection with this, the TRAY HOLDER SLIDE (640) moves forward, and at the same time, the RIGHT SLIDE (575) is moved backwards by the SYNCRO LEVER (632).


UP/DOWN CAM GER 1 (602)
UP/DOWN DRIVE GEAR1 (605)
UP/DOWN IDLER 2 (609)
UP/DOWN IDLER 1 (607)
UP/DOWN MOTOR (624)
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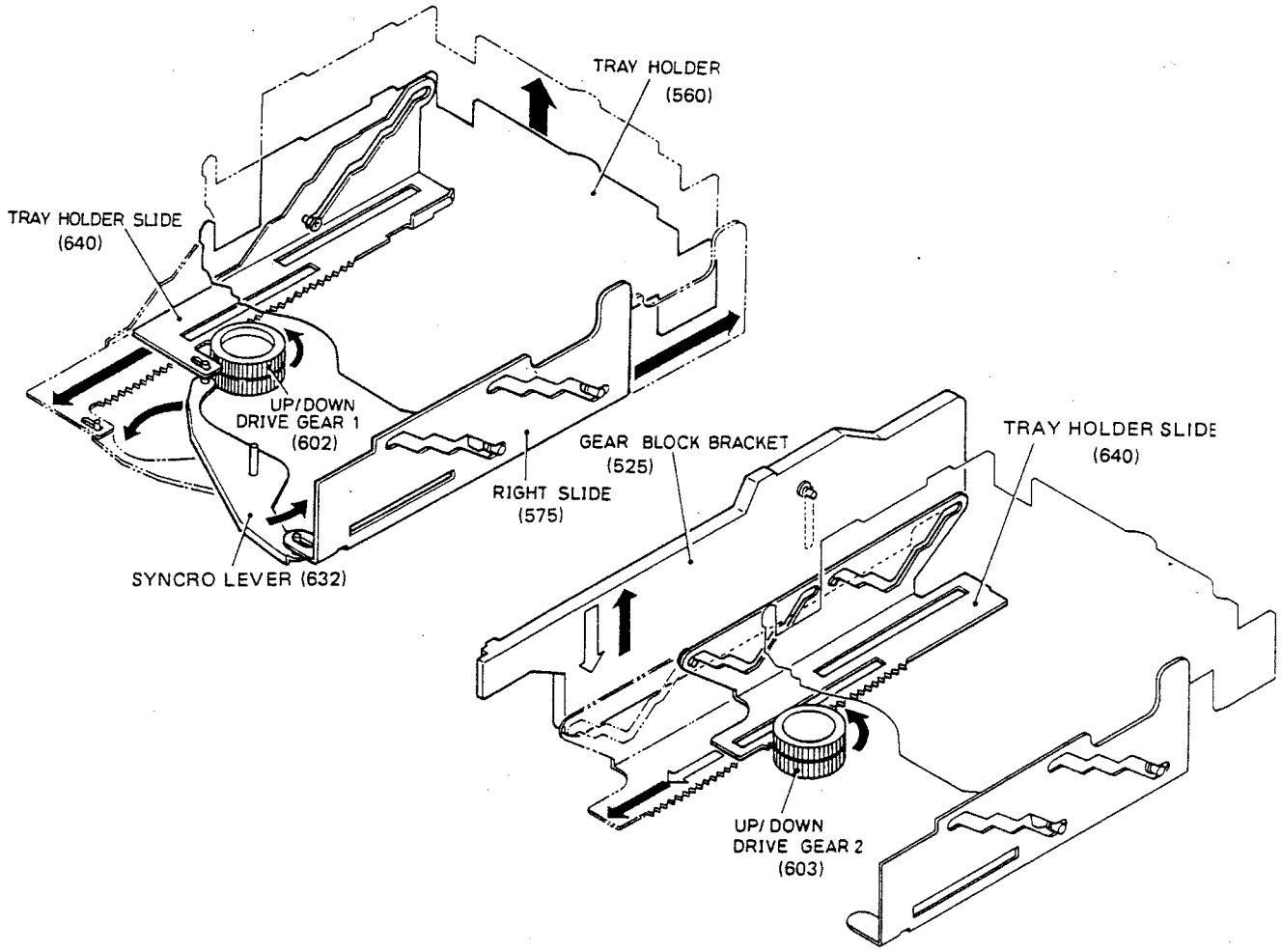
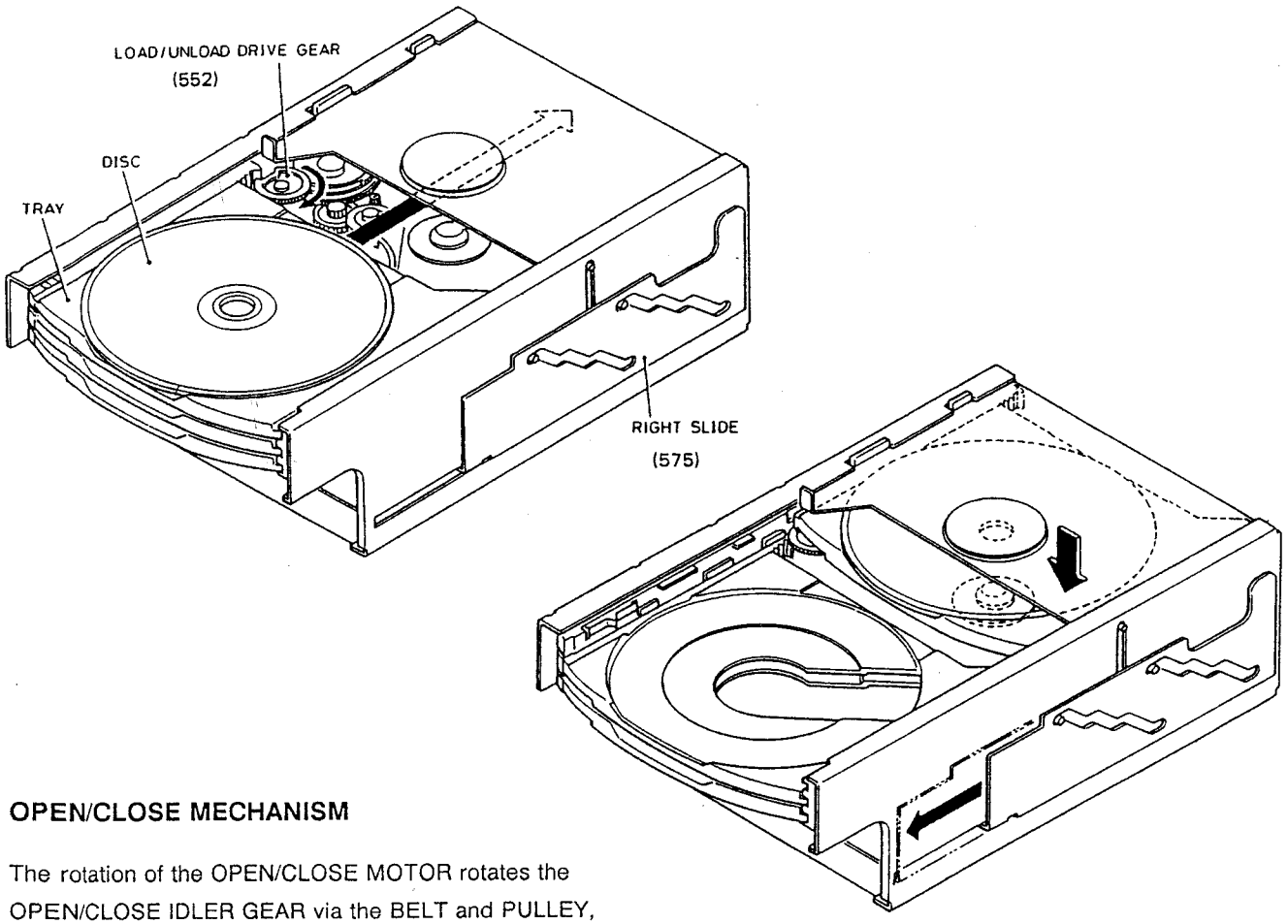


CD CHANGER OPERATION DESCRIPTION

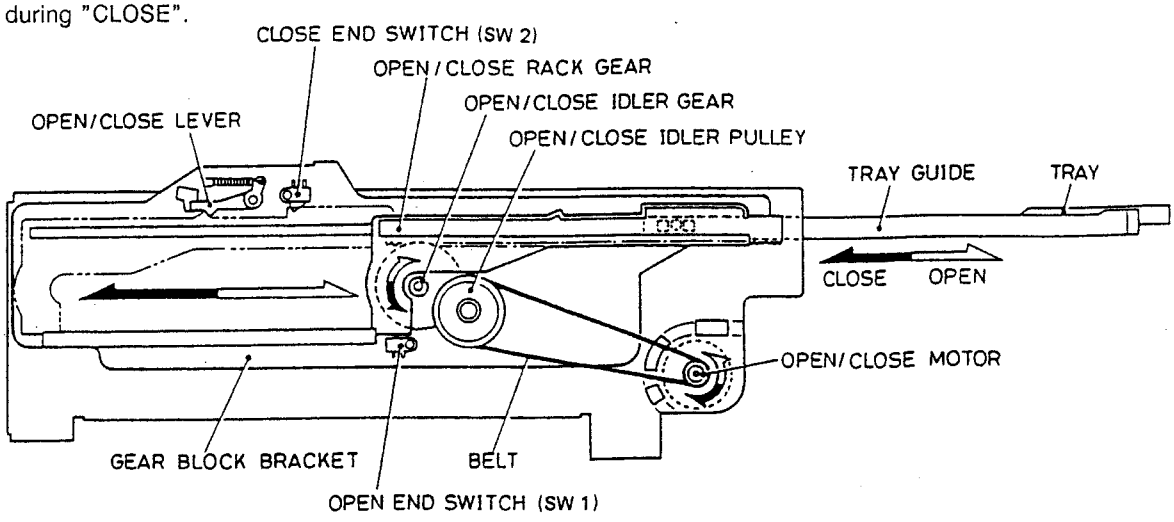
c. LOAD/UNLOAD FUNCTION

(1) The rotation of the LOAD/UNLOAD MOTOR rotates the LOAD/UNLOAD DRIVE GEAR (552) in the clockwise direction.
(2) The DRIVE GEAR and the gear portion of the TRAY mesh together and the TRAY moves backwards.
(3) The completion of TRAY movement causes the UP/DOWN MOTOR to operate and lower the TRAY HOLDER, putting the unit to chucking stayus.



d. OPEN/CLOSE MECHANISM

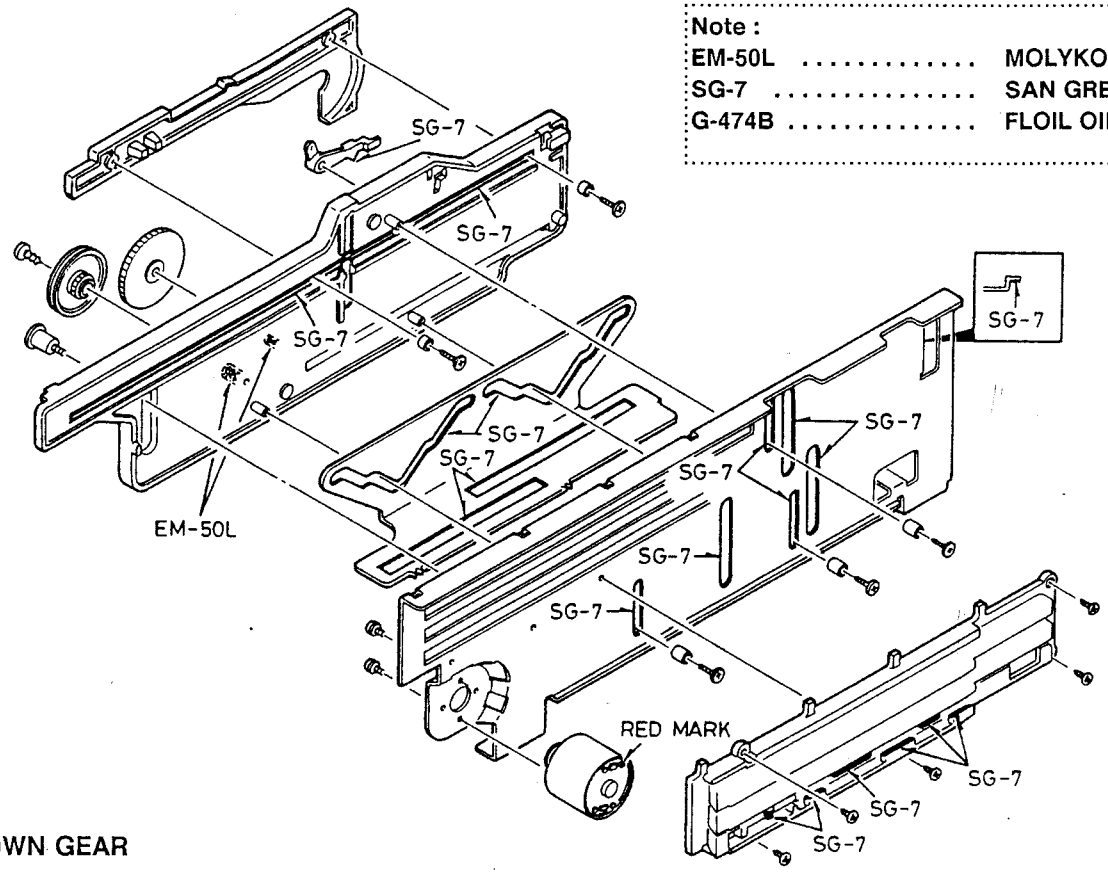
(1) The rotation of the OPEN/CLOSE MOTOR rotates the OPEN/CLOSE IDLER GEAR via the BELT and PULLEY, and the RACK GEAR whitch is intermeshed with the OPEN/CLOSE IDLER GEAR moves forward during "OPEN", backwards during "CLOSE".



CD MECHANISM ADJUSTMENTS

a. CD CHANGER MECHANISM AND OPEN/CLOSE MOTOR

Note :
EM-50L ..... MOLYKOTE, EM-50L
SG-7 ..... SAN GREASE, SG-7
G-474B ..... FLOIL OIL, G-474B



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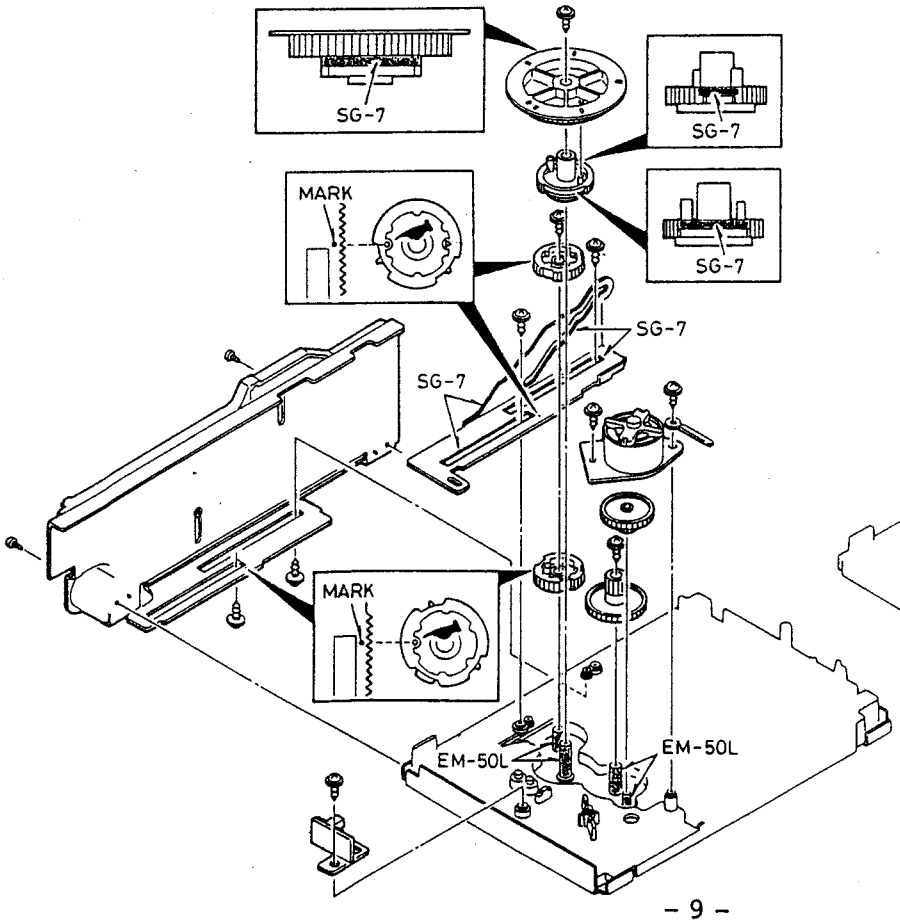
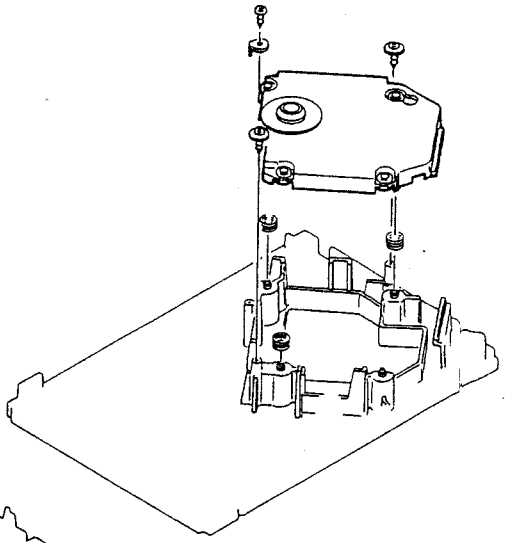


c. CD MECHANISM BLOCK



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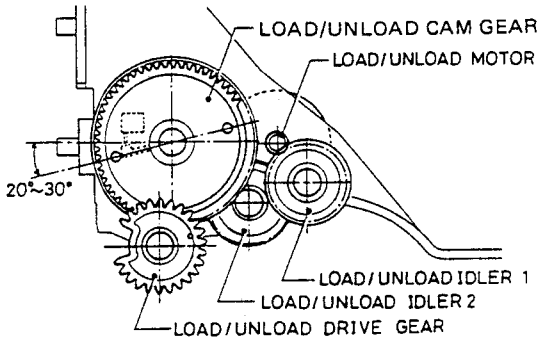
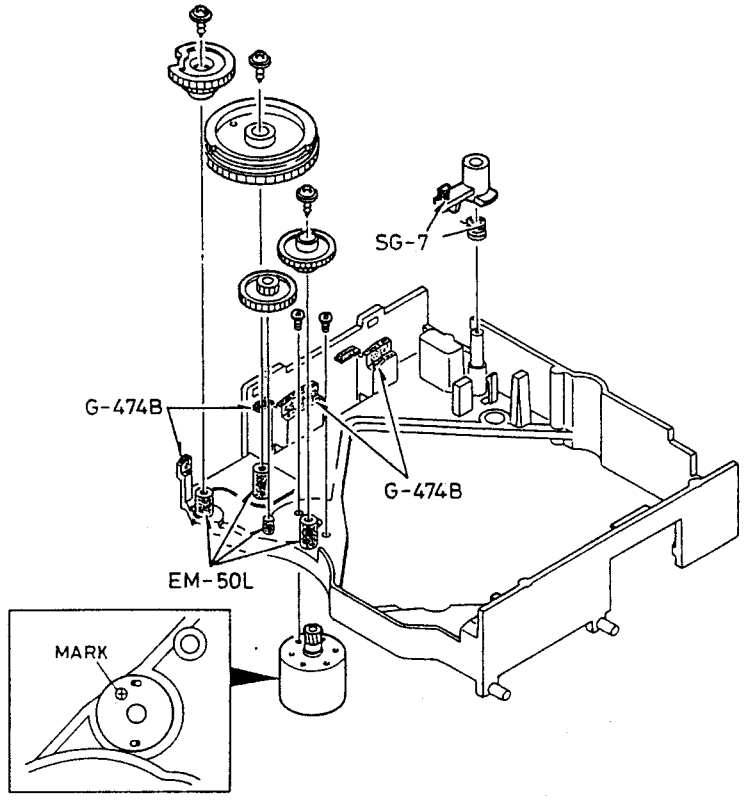
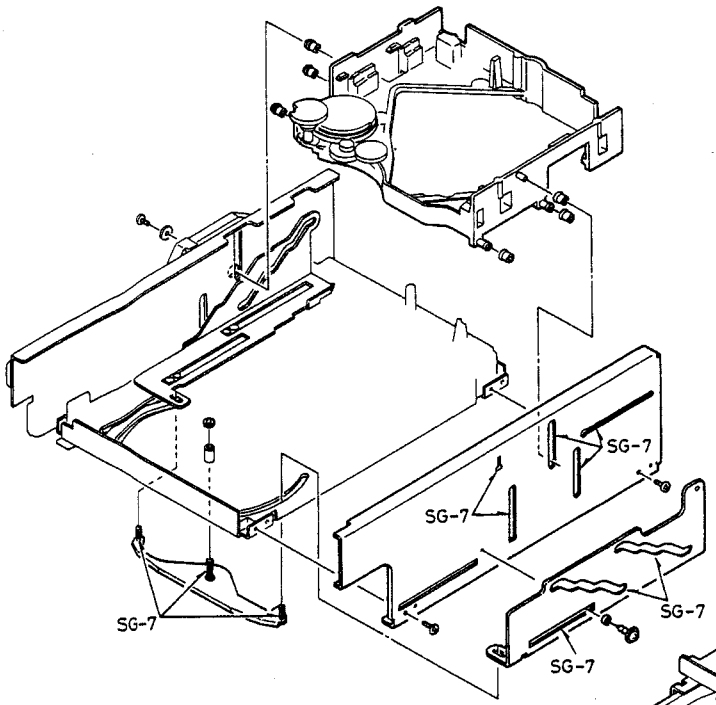




e. TRAY HOLDER



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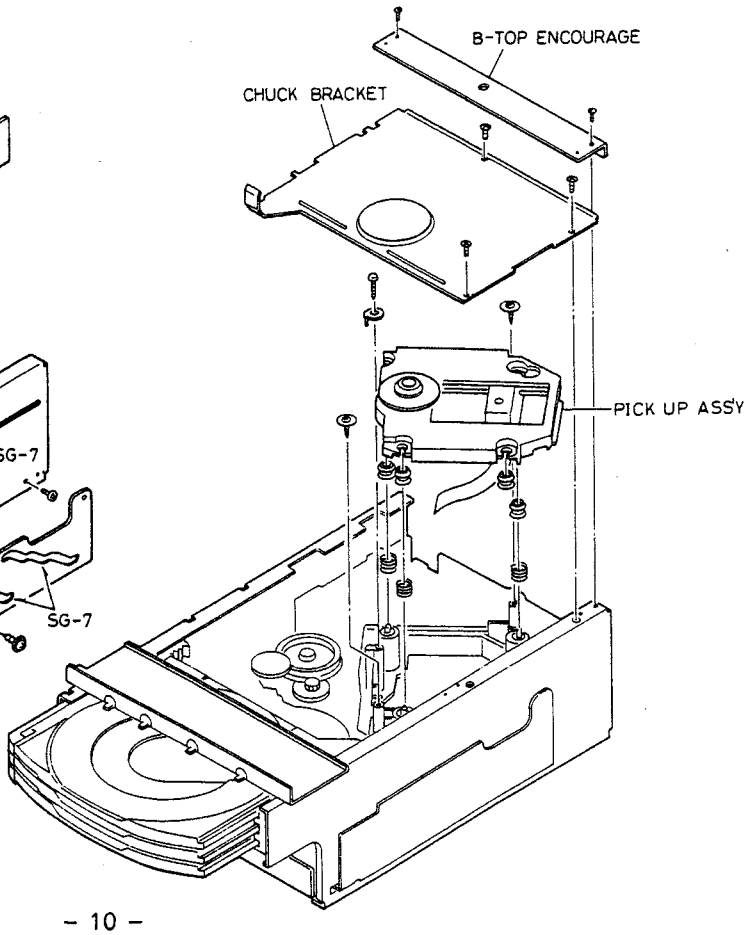

CD MECHANISM ADJUSTMENTS

g. REPLACEMENT AND LUBRICATION OF THE CD MECHANISM

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SG-7 ..... SAN GREASE, SG-7
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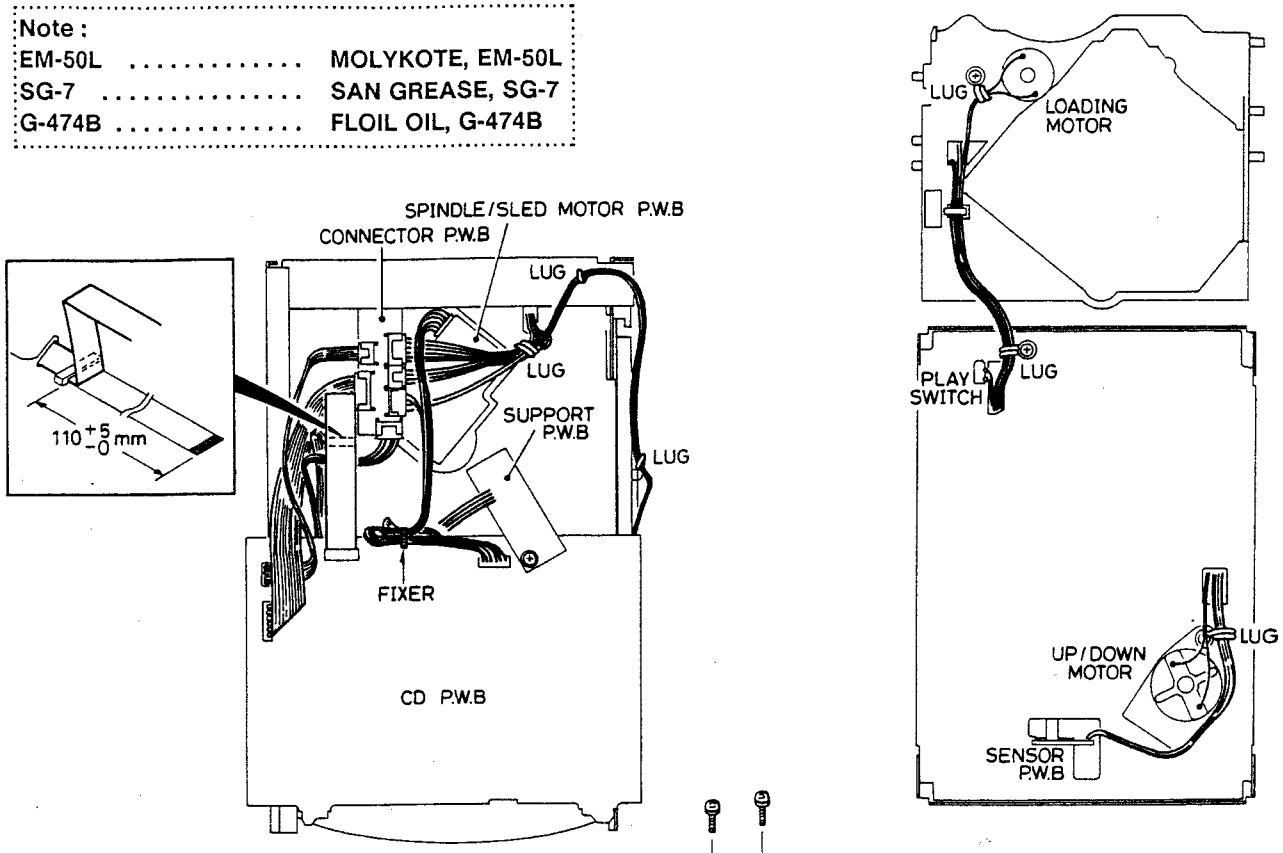
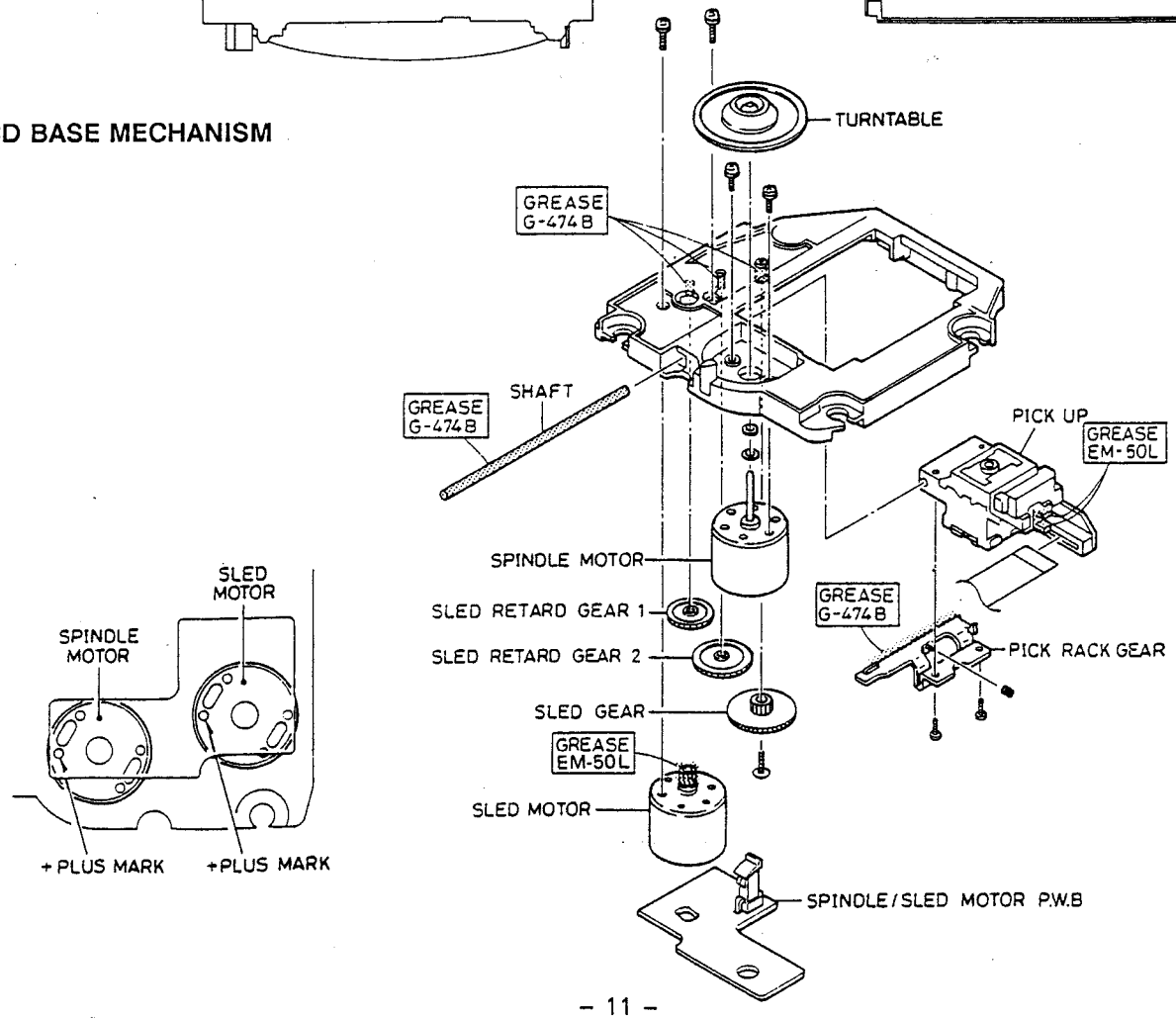


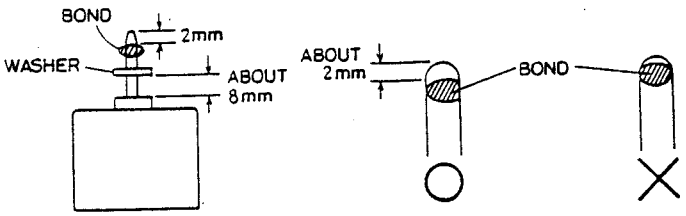
h. CD BASE MECHANISM



CD MECHANISM ADJUSTMENTS

i. CD MECHANISM

(a) Replacement of the spindle motor



- First, prepare the new turntable (701-1) and new special washer (701-4,701-5) for replacement.
  The removed turntable will be deformed by the heat of the soldering iron, and cannot be reused.
- Prepare dial-type calipers.

(1) The attached bonding material can be dissolved by using a 60W soldering iron to heat the shaft at the upper part of the turntable for about one minute.

(2) The turntable can then be removed from the shaft by very carefully applying force upward at the center of the lower surface of the turntable.

(3) Remove the two screws (701-2) and remove the spindle motor (701-6).

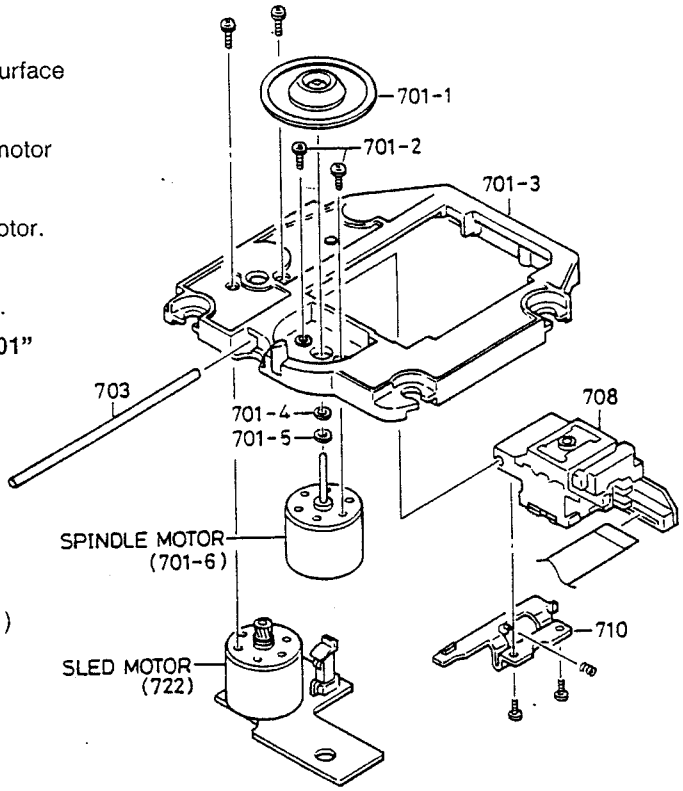
(4) Attach the special washer (701-4, 701-5) to the spindle motor.

(5) Clean the spindle motor's shaft.
To clean them, use a soft cloth soaked in isopropyl alcohol.

(6) Apply a small amount of a mixture of the **"Three Bond 2001"** and **"2015F"** bonding materials to the motor's shaft.

(7) Install the turntable as shown in the figure.

(8) Secure the turntable by pressing gently.
Be sure to wipe away (by using a piece of cloth, or similar material) any bonding material coming out of the hole.



(b) Replacing the pick-up

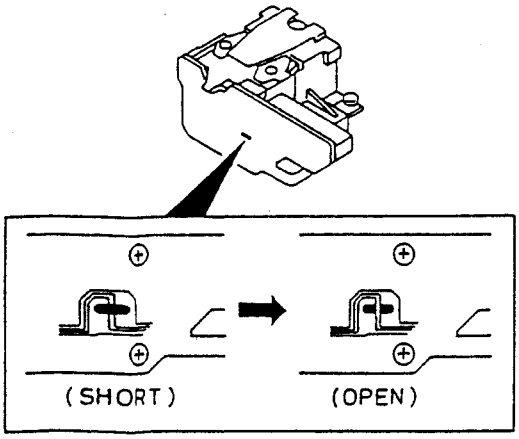
(1) Insert the pick-up rail (703) into the base chassis. (701-3)

(2) If the lach of the base chassis (701-3) are missing when the pick-up rails have been installed, first wipe the tips of the rail with alcohol.

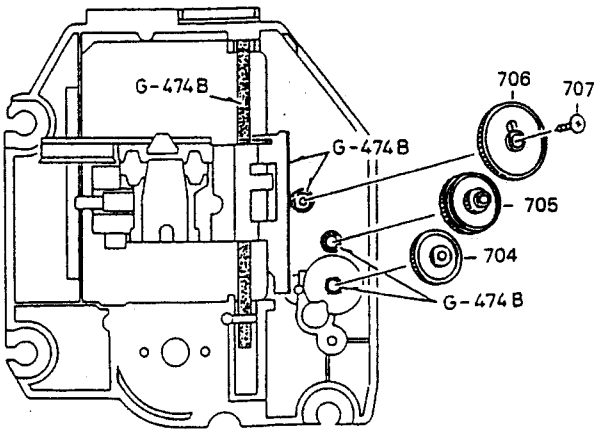
(3) After the pick-up has been replaced, apply grease (**FLOIL G-474B**) to the ▒▒ sections.

(4) The pick-up P.W.Board pattern is **"shorted"**, as shown in the figure, so that the new pick-up will not be susceptible to the effects of static.

(5) Set the pattern to **"open"** after the pick-up has been replaced.



(BE SURE AT THIS TIME, NOT TO TOUCH ANY OTHER PART.)



CD PLAYER ADJUSTMENTS

a. PREPARATIONS

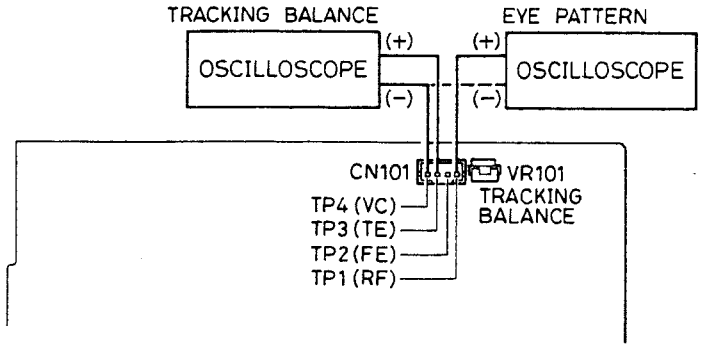
(a) Measuring instruments, tools and filter

(1) Test disc. : YEDS 18 (SONY) or etc.

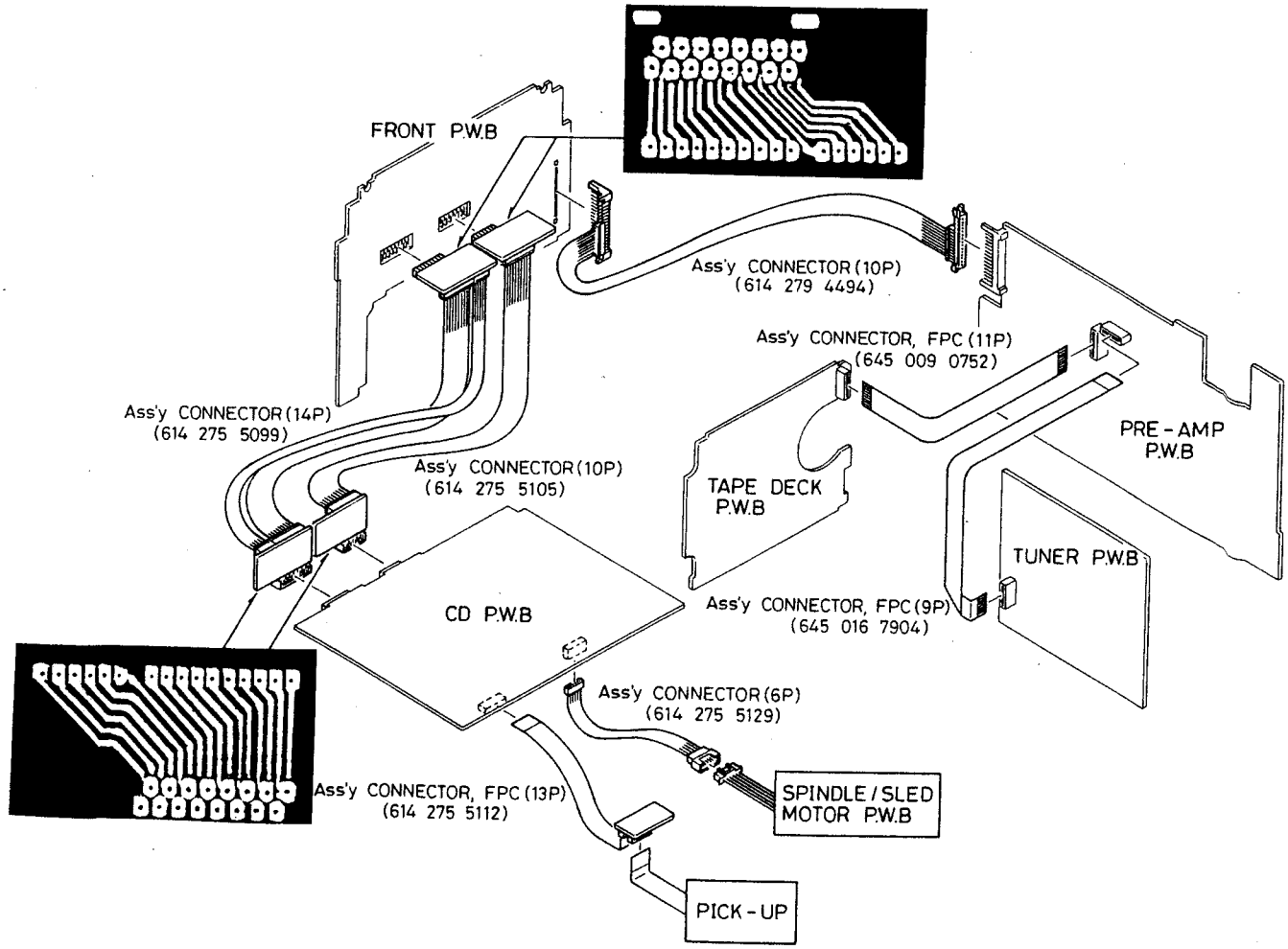
(2) Oscilloscope : SS5711 (10 MHz or dual-phenomenon)
or Memoryscope : DSS6521 (Storagescope)

(3) Screwdrivers (non-metallic) for adjustments

b. PARTS LOCATION



c. TEST CABLES CONNECTION



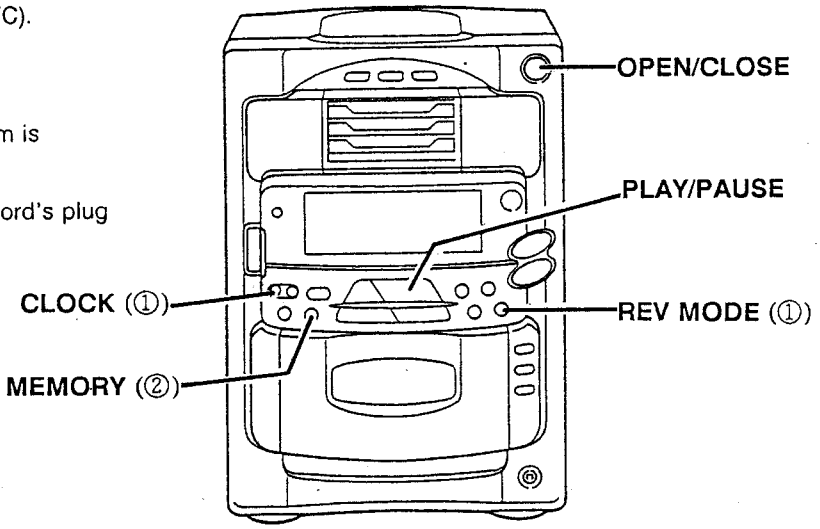
CD PLAYER ADJUSTMENTS

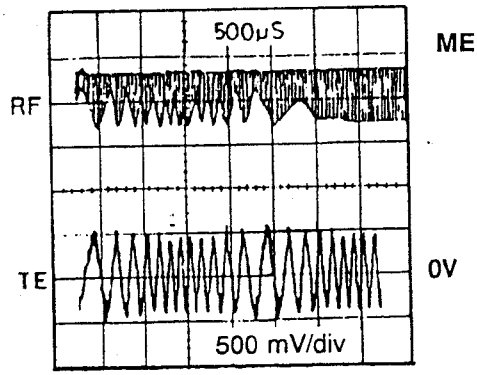
d. ADJUSTMENTS

Adjustment Item	Measuring instrument	Input connection	Output connection	Adjustment location	Adjustment value
(a) Tracking balance	Oscilloscope	—	TP 3 : TE TP 4 : VC	VR101	Waveform symmetry A = B
(b) Checking the "eye" pattern	Oscilloscope	—	TP 1 : RF TP 4 : VC	—	Check be sure that the "eye" pattern is at the center of the waveform and that the diamond shape is clearly defined

(a) Tracking balance adjustment

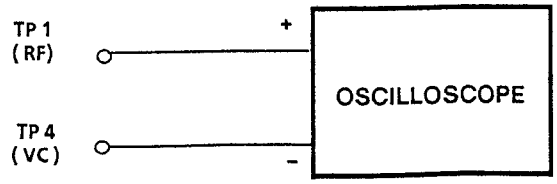
(1) Within one second after pressing **CLOCK** & **REV MODE** switches at the same time, press the **MEMORY** switch. (①,②)
(Service mode : TRACKING BALANCE)
(2) Connect an oscilloscope to TP3 (TE) and TP4 (VC).
(3) Set the test disc. (DISC 1)
(4) PLAY / PAUSE switch push "ON".
(5) Adjust **VR101** so that the oscilloscope's waveform is symmetrical, as shown in the illustration.
(6) To cancel service mode, disconnect the power cord's plug from the electrical outlet.

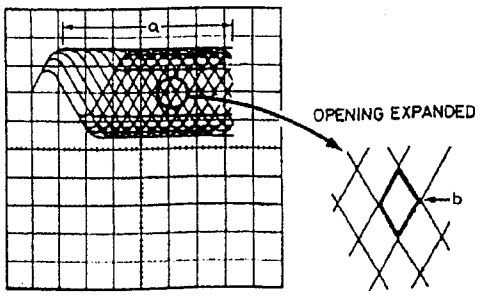




(b) Checking the "eye" pattern

(1) Switch "ON" the POWER.
(2) Connect an oscilloscope to TP1 (RF) and TP4 (VC).
(3) Load the test disc.
(4) PLAY switch push ON.
(5) Check to be sure that the " **eye** " pattern is at the center of waveform and that the diamond shape is clearly defined.
(6) Press the STOP button.
(7) Switch "OFF" the **POWER**.





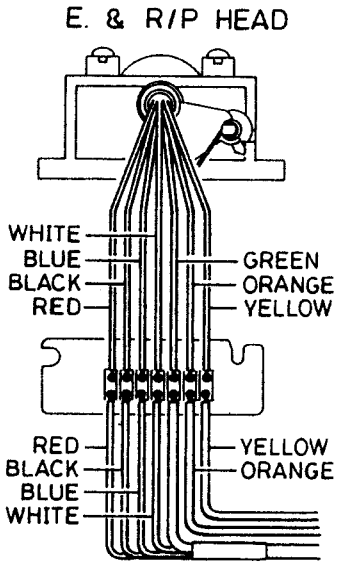
TAPE DECK ADJUSTMENTS

Adjustment Item	Test Tape	Measuring Instrument	Output connection	Adjust location	Adjust value	Note
(a) HEAD AZIMUTH	VTT738 etc. (10 kHz)	AC-voltmeter	SPEAKER TERMINAL	HEAD AZIMUTH SCREW (FWD / REVERSE)	Max.	---
(b) MOTOR SPEED (NORMAL)	MTT-111 (3,000 Hz)	FREQUENCY COUNTER	SPEAKER TERMINAL	VR302	3,000 Hz	CN303 (1 & 2) "OPEN"
(c) MOTOR SPEED (HIGH)	TCW-211 (1,500 Hz)	FREQUENCY COUNTER	SPEAKER TERMINAL	VR301	3,000 Hz	CN303 (1 & 2) "SHORT"

a. HEAD REPLACEMENT AND AZIMUTH ADJUSTMENT

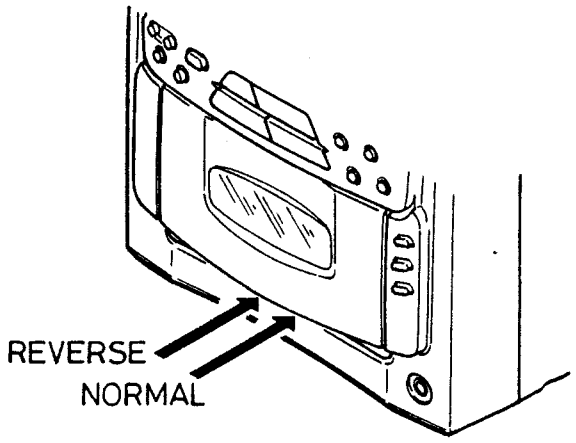
(a) Head replacement

(1) After replacement, demagnetize the heads by using a degausser.
(2) Be sure to clean the heads before attempting to make any adjustments.
(3) Be sure both channels (1 and 2) are the same level (Using a dual-channel oscilloscope).
(4) All wiring should be returned to the original position after work is completed.



(b) Head azimuth

(1) Load a test tape (VTT-738, etc.: 10 kHz) for azimuth adjustment.
(2) Press the Forward PLAY button (normal playback).
(3) Use a flat-tip (-) screwdriver to turn the screw for normal azimuth adjustment so that the left and right outputs are maximized at the same phase during normal playback.
(4) Press the Reverse mode button.
(5) Play the tape in the reverse mode.
(6) Use a flat-to- (-) screwdriver to turn the screw for reverse azimuth adjustment so that the left and right outputs are maximized at the same phase during reverse playback.
(7) Press the STOP button.

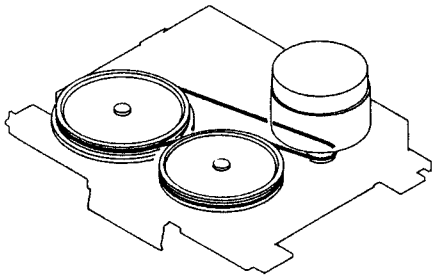


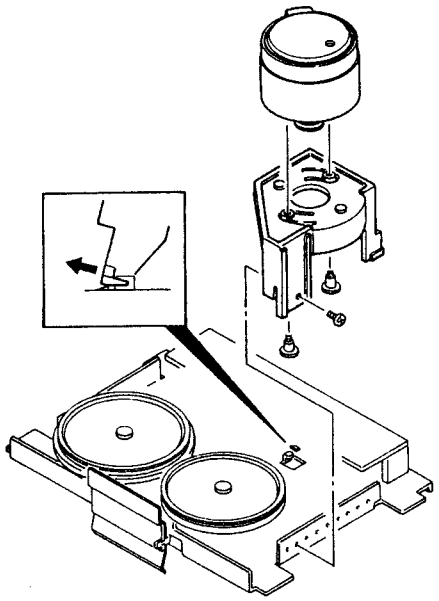
- After making the adjustment, secure the azimuth adjustment screw by applying screw lock (TB-1401B).

TAPE DECK ADJUSTMENTS

b. MOTOR REPLACEMENT AND SPEED ADJUSTMENT

(a) Motor replacement





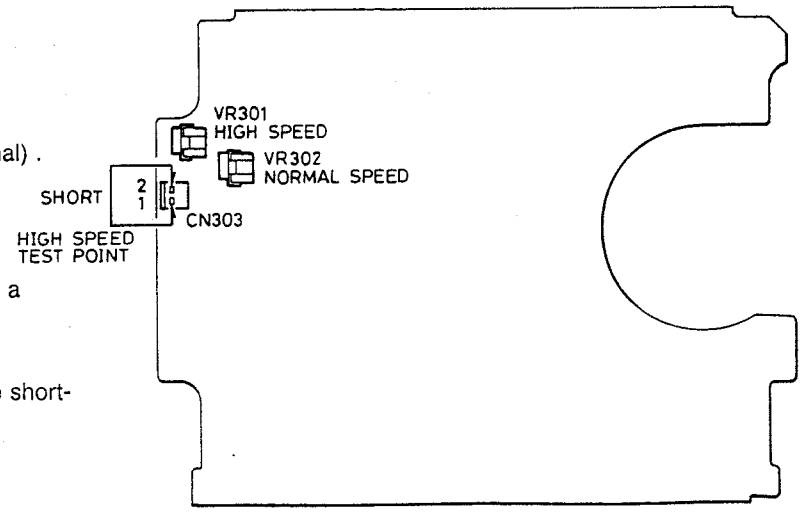
(b) Motor speed

- **NORMAL SPEED**

(1) Insert the test tape (MTT-111, etc. 3,000 Hz) .
(2) Press PLAY button.
(3) Adjust VR302 so that the frequency counter shows a reading of 3,000Hz.
(4) Press STOP button.

- **HIGH SPEED**

(1) Insert the test tape (TCW-211, etc. 1,500 Hz optional) .
(2) Press PLAY button.
(3) Set to the high-speed condition.
(4) Short-circuit test points socket CN303 (1 & 2).
(5) Adjust VR301 so that the frequency counter shows a reading of 3,000Hz.
(6) Press STOP button.
(7) After the completion of the adjustment, remove the short-circuit between socket CN303 (1 & 2).



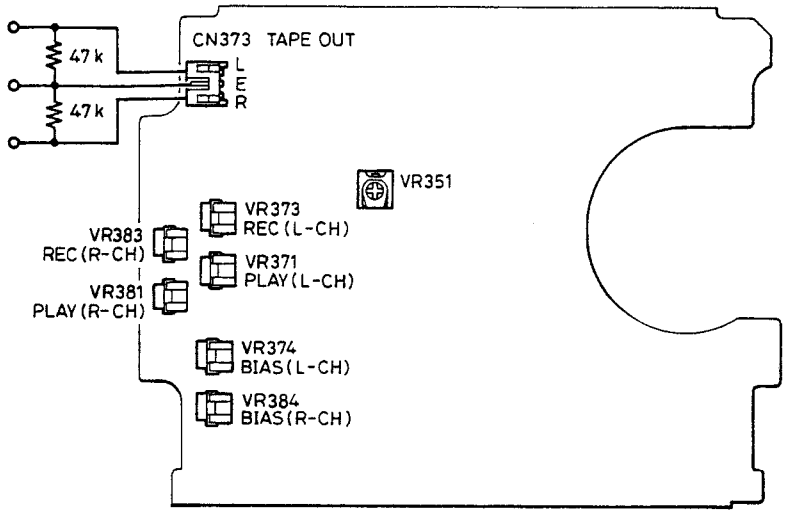
c. CHECKING THE MECHANISM TORQUES

- Clean the head, capstan and pinch roller before making any measurement.
- Check during both normal and reverse playback.

Measurement	Take-up torque	Back tension	Tape tension
Cassette for measurement	PLAY:TW-2111A (FWD) PLAY:TW-2121A (REV) F.FWD/REW:TW-2231	PLAY:TW-2111A (FWD) PLAY:TW-2121A (REV)	Drive-power cassette TW-2412 (FWD) TW-2422 (REV)
PLAY	30~ 60 gr.cm	2.0~ 5.0 gr.cm	80 gr or more
F.FWD / REW	70~ 140 gr.cm	–	–

AMPLIFIER ADJUSTMENTS

- Make the following adjustments after first cleaning the head assembly and checking the adjustment of the head azimuth.



Adjustment Item	Test Tape	DOLBY NR SW.	Measuring Instrument	Input Connection	Output connection	Adjust location	Adjust value
(a) Playback output	TCC-130 (DOLBY TAPE)	OFF	AC-Voltmeter	—	TAPE OUT	VR371 (L-CH) VR372 (R-CH)	300 mV
(b) Recording / Playback gain	AC-224 (NORMAL)	OFF	AC-Voltmeter AF-Oscillator	VIDEO - 10 dB, 1 kHz	TAPE OUT	VR373 (L-CH) VR383 (R-CH)	300mV ±0.5 dB
(c) Recording / Playback frequency response	AC-224 (NORMAL)	ON	AC-Voltmeter AF-Oscillator	VIDEO - 30 dB, 1 kHz, 10 kHz	TAPE OUT	VR374 (L-CH) VR384 (R-CH)	at 1 kHz and 10 kHZ 0 ± 1.0 dB

a. ADJUSTMENTS

(a) Playback output adjustment

Dolby NR switch : OFF

(1) Play the test tape and adjust VR371 (L-CH) and VR372 (R-CH) so that playback output becomes 300 mV.

(b) Recording / Playback frequency gain adjustment

Input signal : - 10 dB, 1 kHz

Tape to be used : NORMAL (AC-224, etc.)

(1) Introduce input signals to the VIDEO terminals, and, with the unit in the REC. PAUSE mode, adjustment input level for 300 mV out.
(2) Record the input signal.
(3) Press the REWIND button and rewind tape to the beginning of the recording just made.
(4) Press the PLAY button.
(5) Adjust VR373 (L-CH) and VR383 (R-CH) so that the recording and playback output level differences become 300 mV ± 0.5 dB.
(6) Repeat steps (1) to (5).

(c) Recording / Playback response adjustment

Input signal : - 30 dB, 1 kHz, 10 kHz

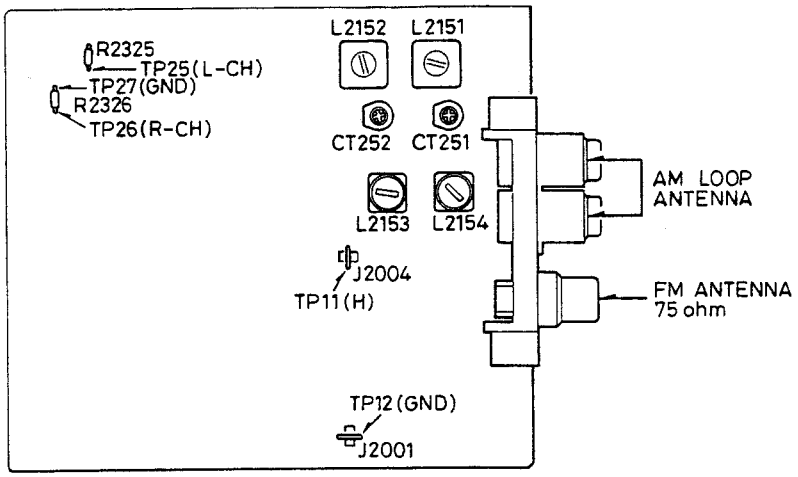
Tape to be used : NORMAL (AC-224, etc.)

Dolby NR switch : ON

(1) Introduce input signals to the VIDEO terminals.
(2) With the unit in the REC. mode. Record these input signals (1 kHz → 10 kHz → 1 kHz → 10 kHz).
(3) Press the REWIND button and rewind tape to the beginning of the recording just made.
(4) Press the PLAY button.
(5) Adjust VR374 (L-CH) and VR384 (R-CH) so that the 10 kHz and 1 kHz and output level differences become 0 ± 1 dB.
(6) Repeat steps (1) to (5).

TUNER ADJUSTMENTS

- Use a plastic screw driver for adjustments. • Speaker impedance : 4 ohm • Standard Output : 500 mW
- FM MODE switch : STEREO
- TUNING FM : 87.5 - 108.0 MHz (50 kHz step) MW : 522 - 1,611 kHz (9 kHz step) LW : 144 - 288 kHz (9 kHz step)



a. ADJUSTMENTS OF FM BAND

SG RF Level : 75 ohm Open Voltage dBμV
Antenna : 75 ohm unbalanced , Modulation : 1 kHz,
Dev. : ± 22.5 kHz (MONO) ± 22.5 kHz (STEREO) ± 6.75 kHz (PILOT)

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	Tuning coverage	---	Connect to Digital DC voltmeter TP 11 (H), TP 12 (G)	87.5 MHz	Low end	---	0.9~1.3V
				108.0 MHz	High end	---	less than 8.0V
2	Tracking	FM Antenna (SG = 8dBμV)	Connect to VTVM TP 25 (H) or TP 26 (H), TP 27 (G)	90.0 MHz	90.0 MHz	---	Max.
				106.0 MHz	106.0 MHz	---	

b. ADJUSTMENTS OF MW BAND

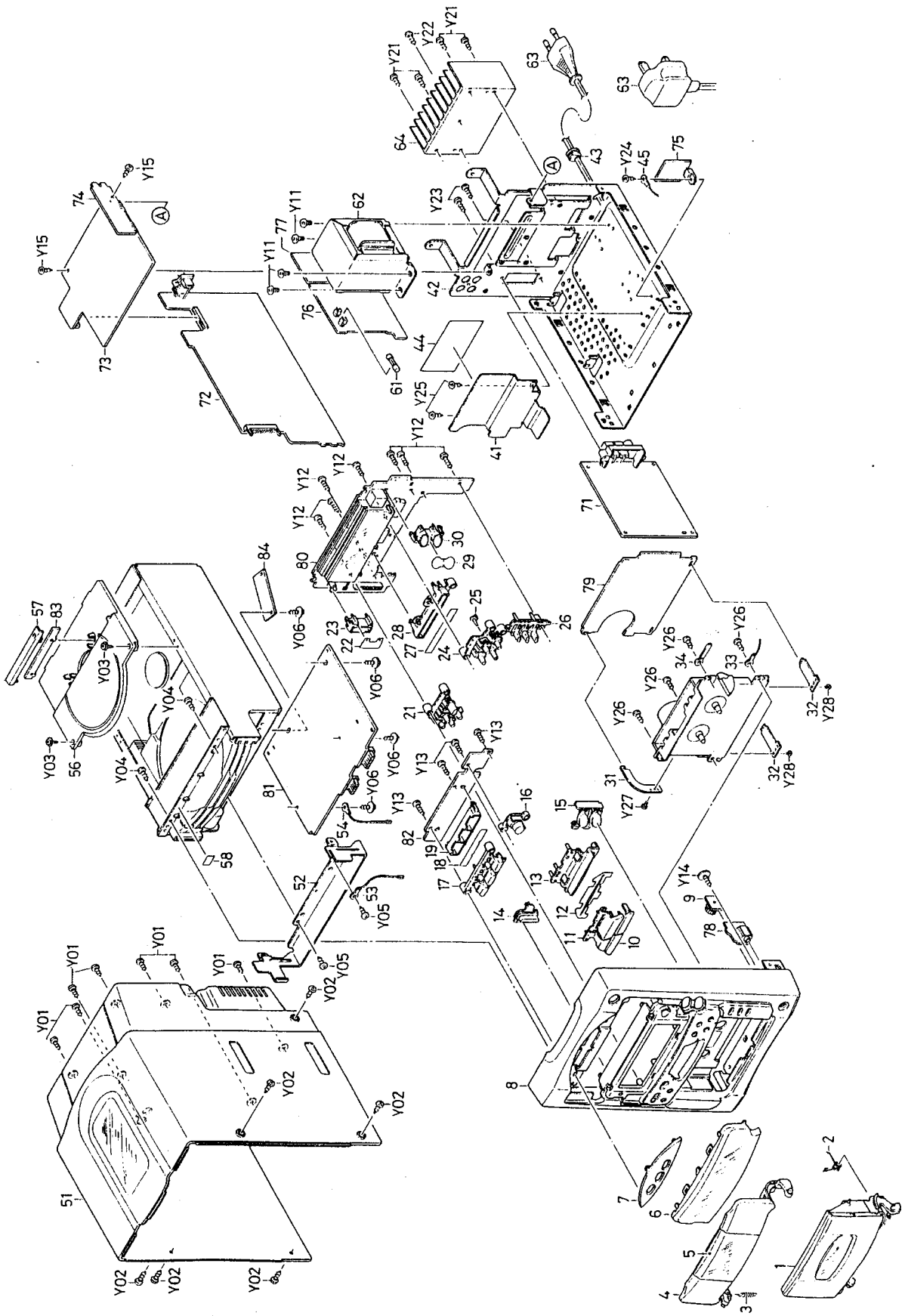
SG Modulation : 1,000 Hz, 30% IRE Loop Antenna

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	Tuning coverage	---	Connect to Digital DC voltmeter TP11 (H), TP12 (G)	522 kHz	Low end	L2153	1.0 ± 0.05V
				1611 kHz	High end	---	less than 9.0V
2	Tracking	Connect AM SG to Test Loop (SG = 80dBμV)	Connect VTVM TP25 (H) or TP26 (H), TP27 (G)	603 kHz	603 kHz	L2152	Max.
				1404 kHz	1404 kHz	CT252	

c. ADJUSTMENTS OF LW BAND

Step	Adjusting Circuit	Connections		SG Frequency	Position of tuning dial	Adjustment	VTVM Oscilloscope or DC voltmeter
		Input	Output				
1	Tuning coverage	---	Connect to Digital DC voltmeter TP11 (H), TP12 (G)	144 kHz	Low end	L2154	1.5 ± 0.05V
				288 kHz	High end	---	less than 9.0V
2	Tracking	Connect AM SG to Test Loop (SG = 85dBμV)	Connect to VTVM TP25 (H) or TP26 (H), TP27 (G)	162 kHz	162 kHz	L2151	Max.
				279 kHz	279 kHz	CT251	

EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION: **Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.**
Regular type resistors are less than 1/4W carbon type and 0 ohm chip resistors.
Regular type capacitors are less than 50V and less than 1000μF type of Ceramic type and Electrical type.

N.S.P : **Not available as service parts.**

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 273 9747	CARTON CASE (XE)
	614 271 4164	CARTON CASE (UK)
	614 271 4201	CUSHION,TOP
	614 271 4218	CUSHION,BOTTOM
	614 273 9778	INSTRUCTION MANUAL (XE)
	614 271 4300	INSTRUCTION MANUAL (UK)
	645 012 4631	POLY SHEET,500X1050MM (XE)
	614 222 1365	SHEET,SET,500X1050MM (UK)
	614 277 3437	NOTICE (XE)
	614 277 3420	NOTICE (UK)
	614 245 8587	NOTICE,AC POWER CORD (UK)
	645 011 3673	REMOCON,RB-MS5
	645 005 7007	COVER,BATTERY, REMOTE CONTROL
	614 229 4635	ANTENNA,FM
	645 005 1227	ASSY,ANTENNA,LOOP,AM

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 279 4449	ASSY,LID,CASSETTE (WITH WINDOW)
2	614 271 4645	SPRING,WIRE,LID,CASSETTE
3	614 271 4638	SPRING,TENSION,DOOR,CD
4	614 271 3563	DOOR,CD
5	614 271 3594	DEC,WINDOW,DOOR,CD,CENTER
6	614 271 3570	DEC,WINDOW,FL,DISPLAY
7	614 271 3600	DEC,ESCUTCHEON CHANGER
8	614 271 3389	ASSY,PANEL,FRONT
9	614 270 8316	ASSY,GEAR,LID,CASSETTE
10	614 271 3402	BUTTON,CD TRACK/DECK
11	614 271 3396	BUTTON,MECHANISM, STOP/CD PLAY/PAUSE
12	614 274 8541	COVER,DECK,MECHANISM,BUTTON
13	614 271 3617	DEC,WINDOW,MECHANISM,BUTTON
14	614 271 3433	BUTTON,POWER
15	614 271 3426	BUTTON,VOLUME(+)(-)
16	614 271 3440	BUTTON,OPEN/CLOSE
17	614 271 3457	BUTTON,CHANGER, DISC 1 - DISC 3
18	614 274 8589	DEC,SHEET,CHANGER,BUTTON
19	614 271 3808	REFLECTOR,BUTTON,CHANGER
21	614 271 3419	BUTTON,FUNCTION/FUNCTION/ CLOCK/TIMER/BAND/MEMORY
22	614 274 8572	DEC,SHEET,POWER,BUTTON
23	614 271 3822	REFLECTOR,BUTTON,POWER
24	614 271 3464	BUTTON,COMPU.REC/TUNE(+)(-)
25	614 271 3624	DEC,WINDOW,REC,BUTTON
26	614 271 3471	BUTTON,SOUND PRESET/ BASSXPANDER/DOLBY NR
27	614 274 8619	DEC,SHEET,MECHANISM,BUTTON
28	614 271 3792	REFLECTOR,DEC,WINDOW
29	614 274 8602	DEC,SHEET,VOLUME
30	614 271 3815	REFLECTOR,BUTTON,VOLUME
31	614 272 9656	MOUNTING,PWB,LEFT
32	614 271 3730	MOUNTING,PWB,BOTTOM
33	614 272 1582	LUG,TAPE MECHANISM LEAD
41	614 271 3839	SHIELD,POWER TRANSFORMER
42	614 271 3501	CABINET,BOTTOM
43	614 129 1901	FIXER,AC POWER CODE
44	614 275 0247	SPACER,SHIELD,TRANSFORMER
51	614 275 1831	ASSY,CABINET,TOP (XE)
51	614 271 3334	ASSY,CABINET,TOP (UK)
52	614 272 4750	MOUNTING,CD MECHANISM
53	614 051 9785	LUG,CD MECHANISM
54	614 051 9785	LUG,CD PWB
56	614 270 9948	DEC,WINDOW,DISC-LIGHT
57	614 270 9955	MOUNTING,BRACKET, DISC-LIGHT
58	614 276 1687	SPACER,10X15MM, FIBER,CD-MECHANISM
	614 275 5266	REFLECTOR,SHEET,IR
	614 125 0236	CUSHION,DEC,WIND,CASSETTE
	614 208 0986	CUSHION,10X40MM,TUNER PWB
	614 051 9785	LUG,LEAD MTG.
	614 129 4971	FIXER,NYLON,LEAD MTG.
	614 231 6832	LABEL,SAFETY,LASER CLASS 1

FIXING PARTS

Ref. No.	Part No.	Description
Y01	411 021 6603	SCR S-TPG BIN 3X8MM,CABINET
Y02	411 021 6603	SCR S-TPG BIN 3X8MM,CABINET
Y03	411 025 2205	SCR S-TPG PAN 2X6MM,DEC WINDOW/CD-MECHANISM,UPPER
Y04	411 021 4005	SCR S-TPG BIN 3X12MM, CD CHANGER MECHANISM
Y05	411 021 5705	SCR S-TPG BIN 3X6MM, MOUNTING/CD-MECHANISM
Y06	411 020 8905	SCR S-TPG BRZ+FLG 3X10MM, CD PWB
Y11	411 001 3905	SCR S-TPG BIN 4X6MM, POWER TRANSFORMER
Y12	411 021 4005	SCR S-TPG BIN 3X12MM, FRONT PWB
Y13	411 021 4005	SCR S-TPG BIN 3X12MM, LED PWB
Y14	412 032 6408	SPECIAL SCREW, GEAR/TAPE DECK
Y15	411 021 3503	SCR S-TPG BIN 3X10MM, POWER-AMP-PWB/BOTTOM
Y21	411 021 3503	SCR S-TPG BIN 3X10MM, HEAT-SINK/BOTTOM

PARTS LIST

Ref. No.	Part No.	Description
Y22	411 021 4302	SCR S-TPG BIN 3X14MM, HEATSINK/BOTTOM
Y23	411 021 4104	SCR S-TPG BIN 3X12MM, BOTTOM/ANTENNA-TERMINAL, BOTTOM/VIDEO SOCKET
Y24	411 021 5705	SCR S-TPG BIN 3X6MM, REGULATOR PWB
Y25	411 021 5705	SCR S-TPG BIN 3X6MM, SHIELD PLATE
Y26	411 021 4005	SCR S-TPG BIN 3X12MM, TAPE MECHANISM
Y27	411 025 2007	SCR S-TPG PAN 2X4MM, TAPE MECHANISM BRACKET
Y28	411 025 2007	SCR S-TPG PAN 2X4MM, TAPE MECHANISM BRACKET

ELECTRICAL PARTS

Ref. No.	Part No.	Description
61	⚠423 016 9902	FUSE 250V 0.8A (FU499)
62	⚠645 010 0871	TRANSFORMER,POWER,T0001
63	⚠614 255 2513	POWER CORD,AC (XE)
or	⚠614 233 8971	POWER CORD,AC (XE)
or	⚠614 023 3148	POWER CORD,AC (XE)
63	⚠645 008 9732	POWER CORD,AC (UK)
64	614 272 8352	HEAT SINK,POWER AMP.
CN381	614 274 2686	ASSY,WIRE,6P,HEAD LEAD
CN427	614 276 0185	CORD,1P CONNECTOR
CN428	614 276 0192	CORD,1P CONNECTOR
CN429	614 276 0208	CORD,1P CONNECTOR
CN488	645 012 0091	FLEXIBLE FLAT CABLE,9P, TUNER-PRE AMP
CN489	645 012 0107	FLEXIBLE FLAT CABLE,11P, DECK-PRE AMP

TUNER P.W.BOARD ASSY

Ref. No.	Part No.	Description
71	614 271 2849	ASSY,PWB,TUNER
C2152	403 082 0201	POLYPRO 470P J 100V
C2155	403 082 2205	POLYPRO 560P J 100V
C2457	403 106 1603	NP-ELECT 1U Q 50V
CN201	614 255 5750	TERMINAL,ANTENNA
CN202	645 011 9965	SOCKET,FPC 9P
CT251	645 004 2317	TRIMMER,30PF
CT252	614 007 6356	TRIMMER,11PF
D2151	407 091 5004	VARACTOR DI SVC321SPA-C-2
D2152	407 091 5004	VARACTOR DI SVC321SPA-C-2
D2451	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2454	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2455	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2456	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041

Ref. No.	Part No.	Description
D2461	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2463	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D2464	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
IC231	409 312 4803	IC LA1832M
IC245	409 344 1009	IC LC72131M
L2151	614 255 5798	TRANS,RF,LW ANT
L2152	614 255 5781	TRANS,RF,MW ANT
L2153	614 255 5767	TRANS,OSC,MW
L2154	614 255 5774	TRANS,OSC,LW
L2301	645 004 0580	INDUCTOR,1M J
L2451	645 001 4581	INDUCTOR,100U K
Q2140	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q2152	405 021 0600	TR 2SD1012-G-SPA
Q2153	405 021 0600	TR 2SD1012-G-SPA
Q2154	405 021 0600	TR 2SD1012-G-SPA
Q2155	405 021 0600	TR 2SD1012-G-SPA
Q2156	405 021 0600	TR 2SD1012-G-SPA
Q2157	405 026 9004	TR 2SK222-D
Q2201	405 016 0806	TR 2SC2839-E
Q2305	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
Q2310	405 016 0806	TR 2SC2839-E
Q2451	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
Q2452	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
Q2453	405 000 0904	TR DTA114YS
or	405 036 3702	TR 2SA1564
T2301	614 029 3906	MX COIL
or	614 255 8119	FILTER,LC
U2101	614 241 7447	TUNER,FM
X2301	645 010 0024	OSC,CERAMIC 456KHZ
or	614 246 0870	RESONATOR,456KHZ
X2451	614 229 2457	CRYSTAL,7.2MHZ
or	614 204 0317	CRYSTAL,7.2MHZ
or	614 240 1118	RESONATOR,7.2MHZ
XF221	614 240 2917	FILTER,CERAMIC,FM
or	614 254 3214	FILTER,FM
XF222	614 240 2917	FILTER,CERAMIC,FM
or	614 254 3214	FILTER,FM
XF231	614 246 0849	FILTER,AM
XF233	645 012 0138	DISCR,CERAMIC,10.75MHZ
or	645 012 2804	DISCR,CERAMIC,10.75MHZ
or	645 012 0374	DISCR,CERAMIC,10.75MHZ
or	645 012 2811	DISCR,CERAMIC,10.75MHZ

PARTS LIST

PRE-AMPLIFIER P.W.BOARD ASSY

Ref. No.	Part No.	Description
72	614 271 2795	ASSY,PWB,PRE-AMP
C4590	403 262 8607	DL-ELECT 0.047F Z 5.5V
CN451	614 260 7411	SOCKET,VIDEO
CN452	645 012 0039	SOCKET,15P
CN453	645 011 9965	SOCKET,FPC 9P
CN454	645 006 0939	PLUG,6P
CN455	645 011 9972	SOCKET,FPC 11P
CN456	645 012 0022	PLUG,16P
D4591	407 099 5402	ZENER DIODE MTZJ6.2B
or	407 051 7208	ZENER DIODE GZS6.2Y
D4592	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4695	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4696	407 004 9709	DIODE DSK10C
IC451	409 353 8709	IC BU4052BCF
IC452	409 133 8103	IC NJM4558M-S
IC453	409 342 0608	IC BH3854FS
Q4592	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q4593	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q4594	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
S4591	614 215 9828	SWITCH,TACT,RESET

POWER AMPLIFIER P.W.BOARD ASSY

Ref. No.	Part No.	Description
73	614 273 0881	ASSY,PWB,POWER AMP
C4900	403 189 4706	ELECT 4700U M 35V
CN471	645 012 0015	PLUG,15P,PRE-AMP.
CN472	645 004 2720	PLUG,6P,POWER TRANSFORMER, SECONDARY
CN473	645 004 2737	PLUG,7P,PHONES
CN474	614 020 6562	SOCKET,4P,REGULATOR
or	614 223 9223	SOCKET,4P,REGULATOR
D4701	407 004 9709	DIODE DSK10C
D4702	407 004 9709	DIODE DSK10C
D4771	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4772	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4773	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4774	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4801	407 004 9709	DIODE DSK10C
D4802	407 004 9709	DIODE DSK10C
D4901	407 070 2109	ZENER DIODE GZS18X
or	407 099 7505	ZENER DIODE MTZJ18A

Ref. No.	Part No.	Description
D4902	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4903	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4904	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4906	407 051 7406	ZENER DIODE GZS6.8X
or	407 099 5600	ZENER DIODE MTZJ6.8A
D4907	407 051 6904	ZENER DIODE GZS5.6Y
or	407 127 3905	ZENER DIODE MTZJ5.6B
D4910	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4911	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4912	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4913	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D4914	407 051 6003	ZENER DIODE GZS33X
or	407 099 9806	ZENER DIODE MTZJ33A
D4921	⚠407 127 1505	DIODE RBV-602LF-A
HS401	614 264 0159	HEAT SINK,FOR D4921
IC471	⚠409 245 5601	IC LA4705
IC472	409 211 6601	IC NJM4558L
IC473	409 211 6601	IC NJM4558L
Q4701	405 021 0600	TR 2SD1012-G-SPA
Q4740	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4741	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4765	405 075 8409	TR DTC144TS
or	405 105 7204	TR BA1L4Z
Q4766	405 075 8409	TR DTC144TS
or	405 105 7204	TR BA1L4Z
Q4771	405 000 0508	TR DTA114ES
or	405 078 2305	TR BN1A4M
or	405 001 1108	TR RN2202
Q4801	405 021 0600	TR 2SD1012-G-SPA
Q4840	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y

PARTS LIST

Ref. No.	Part No.	Description
Q4841	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4900	⚠405 035 7107	TR 2SD1913-R
or	⚠405 035 7206	TR 2SD1913-S
or	⚠405 095 1602	TR 2SD2061-E
or	⚠405 095 1701	TR 2SD2061-F
Q4901	⚠405 035 7107	TR 2SD1913-R
or	⚠405 035 7206	TR 2SD1913-S
or	⚠405 095 1602	TR 2SD2061-E
or	⚠405 095 1701	TR 2SD2061-F
Q4902	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q4903	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4905	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4907	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
Q4908	⚠405 013 6801	TR 2SC2274-E
or	⚠405 013 7006	TR 2SC2274-F
or	⚠405 013 7204	TR 2SC2274K-E
or	⚠405 013 7303	TR 2SC2274K-F
Q4909	405 023 5306	TR 2SD400-F-MP
R4721	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4722	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4725	⚠402 044 6008	RESISTOR 0.1 J- 1/2W
R4726	⚠402 048 1702	RESISTOR 100 J- 1W
R4727	401 231 2106	MT FILM 22K DC 1/4W
R4728	401 231 2106	MT FILM 22K DC 1/4W
R4740	401 231 2304	MT FILM 56K DC 1/4W
R4741	401 231 2106	MT FILM 22K DC 1/4W
R4742	401 231 2205	MT FILM 47K DC 1/4W
R4743	401 024 9701	CARBON 12K JA 1/6W
R4821	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4822	⚠402 004 5300	FUSIBLE RES 2.2 J- 1/4W
R4825	⚠402 044 6008	RESISTOR 0.1 J- 1/2W
R4826	⚠402 048 1702	RESISTOR 100 J- 1W
R4827	401 231 2106	MT FILM 22K DC 1/4W
R4828	401 231 2106	MT FILM 22K DC 1/4W
R4840	401 231 2304	MT FILM 56K DC 1/4W
R4841	401 231 2106	MT FILM 22K DC 1/4W
R4842	401 231 2205	MT FILM 47K DC 1/4W
R4900	⚠402 044 6008	RESISTOR 0.1 J- 1/2W
R4903	⚠402 044 6008	RESISTOR 0.1 J- 1/2W
R4908	⚠402 047 0409	RESISTOR 47 J- 1/2W
R4913	⚠402 004 4303	FUSIBLE RES 10 J- 1/4W
R4922	⚠402 023 1703	FUSIBLE RES 100 J- 1/4W
R4923	⚠402 023 1703	FUSIBLE RES 100 J- 1/4W
SA401	411 021 6405	SCR S-TPG BIN 3X8MM

SPEAKER TERMINAL P.W.BOARD ASSY

Ref. No.	Part No.	Description
74	614 273 0928	ASSY,PWB,SPEAKER TERMINAL
C4781	403 057 2803	POLYESTER 0.1U K 50V
C4782	403 060 8205	POLYESTER 0.033U K 50V
C4881	403 057 2803	POLYESTER 0.1U K 50V
C4882	403 060 8205	POLYESTER 0.033U K 50V
CN478	645 006 1875	PLUG,2P,SPEAKER L-CH
CN488	645 006 1875	PLUG,2P,SPEAKER R-CH

REGULATOR, DC 12V P.W.BOARD ASSY

Ref. No.	Part No.	Description
75	614 275 0933	ASSY,PWB,REGULATOR
CN497	614 020 6562	SOCKET,4P,AMP
or	614 223 9223	SOCKET,4P,AMP
D4970	407 051 4405	ZENER DIODE GZS13Y
or	407 099 6805	ZENER DIODE MTZJ13B
Q4970	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q4971	⚠405 035 7107	TR 2SD1913-R
or	⚠405 035 7206	TR 2SD1913-S
or	⚠405 095 1602	TR 2SD2061-E
or	⚠405 095 1701	TR 2SD2061-F
Q4972	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
R4970	⚠402 048 1504	RESISTOR 1 J- 1W

POWER TRANSFORMER, PRIMARY P.W.BOARD ASSY

Ref. No.	Part No.	Description
76	614 273 0904	ASSY,PWB,TRANSFORMER, PRIMARY
F4999	⚠614 229 0422	INDUCTOR,FERITE
FCLP5	645 006 4760	HOLDER,FUSE
FCLP6	645 006 4760	HOLDER,FUSE
WR498	614 017 8203	TERMINAL BOARD
WR499	614 017 8203	TERMINAL BOARD

POWER TRANSFORMER, SECONDARY P.W.BOARD ASSY

Ref. No.	Part No.	Description
77	614 273 0911	ASSY,PWB,TRANSFORMER, SECONDARY
CN496	614 020 6586	SOCKET,6P,AMP
or	614 223 9247	SOCKET,6P,AMP
CN499	614 271 2177	ASSY,WIRE,6P,POWER AMP
R4961	⚠402 044 0907	FUSIBLE RES 1.0 J- 1/4W

PHONES P.W.BOARD ASSY

Ref. No.	Part No.	Description
78	614 273 0829	ASSY,PWB,PHONES
CN415	645 011 6384	JACK,PHONE D3.6,PHONES
CN416	614 020 6593	SOCKET,7P,POWER AMP
or	614 223 9254	SOCKET,7P,POWER AMP
CN417	614 272 7683	ASSY,WIRE,7P,POWER AMP

TAPE DECK P.W.BOARD ASSY

Ref. No.	Part No.	Description
79	614 273 0898	ASSY,PWB,TAPE DECK
C3305	403 058 9900	POLYESTER 0.018U K 50V
C3306	403 058 1102	POLYESTER 1500P K 50V
CN301	645 011 9972	SOCKET,FPC 11P,PRE
CN302	614 020 6562	SOCKET,4P
or	614 223 9223	SOCKET,4P
CN303	645 012 5829	PLUG,2P,HIGH_SPEED
CN372	645 006 0861	PLUG,7P
CN373	645 005 8226	PLUG,3P
D3501	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3502	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3505	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3551	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3552	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
or	407 153 6109	DIODE 1SS119-041
D3901	407 051 6805	ZENER DIODE GZS5.1Z
or	407 063 8705	ZENER DIODE MTZJ5.1C
D3951	407 051 6805	ZENER DIODE GZS5.1Z
or	407 063 8705	ZENER DIODE MTZJ5.1C
IC311	409 353 8808	IC BU4094BCF
IC351	409 260 9905	IC HA12134AF
or	409 260 9905	IC HA12134AF
IC371	409 361 9408	IC HA12185NT
IC372	409 241 5308	IC BA3126N
L3301	645 009 0615	TRANS,OSC,85KHZ
L3501	614 270 4295	FILTER,LC,19K&85KHZ
L3551	614 270 4295	FILTER,LC,19K&85KHZ
L3702	645 014 2185	INDUCTOR,22M K
L3802	645 014 2185	INDUCTOR,22M K
Q3101	405 007 6701	TR 2SB598-F-NP
or	405 007 6404	TR 2SB598-E-NP
or	405 007 6909	TR 2SB598-G-NP
Q3102	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3103	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q3104	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3165	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3166	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P

Ref. No.	Part No.	Description
Q3167	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3301	405 008 2405	TR 2SB698-F
or	405 008 2306	TR 2SB698-E
or	405 008 2504	TR 2SB698-G
Q3302	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q3303	405 004 4502	TR 2SA608-F-NP
or	405 004 5004	TR 2SA608-G-NP
Q3304	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3305	405 024 9907	TR 2SD734-F
or	405 025 0200	TR 2SD734-G
Q3306	405 077 8100	TR 2SA1437
Q3501	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q3502	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3503	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q3504	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
Q3551	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q3552	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
or	405 068 4807	TR BA1A4P
VR301	645 006 2582	VR,SEMI,2K N
VR302	645 006 2582	VR,SEMI,2K N
VR351	614 250 7247	POTENTIOMETER,10K B
VR371	645 006 2575	VR,SEMI,10K N
VR373	645 006 2575	VR,SEMI,10K N
VR374	645 013 5316	VR,SEMI,100K N
VR381	645 006 2575	VR,SEMI,10K N
VR383	645 006 2575	VR,SEMI,10K N
VR384	645 013 5316	VR,SEMI,100K N

FRONT P.W.BOARD ASSY

Ref. No.	Part No.	Description
80	614 271 2764	ASSY,PWB,FRONT
BR421	614 271 3679	HOLDER,FL
CN401	614 274 7452	ASSY,CONNECTOR-S,6P
CN431	645 012 0046	SOCKET,16P,FRONT/PRE-AMP.
CN433	645 009 0059	PLUG,10P,FRONT-CD
CN434	645 009 0073	PLUG,14P,FRONT-CD
CN435	614 274 7445	ASSY,CONNECTOR-S,11P, TAPE DECK MECHANISM
D4201	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED1
D4202	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED2
D4203	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED3
D4204	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED4
D4205	408 019 9401	LED SLZ-381B-09-AB-T1, CENTER LED5
D4206	408 015 0402	LED SLZ-181B-06-AB-T2, REC LED
D4207	408 015 5100	LED SLP-381B-51-AB, VOL UP LED 1
D4208	408 015 5100	LED SLP-381B-51-AB, VOL UP LED 2
D4209	408 015 5100	LED SLP-381B-51-AB, VOL DOWN LED 1
D4210	408 015 5100	LED SLP-381B-51-AB, VOL DOWN LED 2
D4211	408 014 7204	LED SLP-181B-51-AB, POWER LED 1
D4212	408 014 7204	LED SLP-181B-51-AB, POWER LED2
D4245	408 014 7204	LED SLP-181B-51-AB, STAND BY LED
D4250	407 003 4507	DIODE DAP202K
D4260	407 051 5907	ZENER DIODE GZS3.9Z
or	407 099 4603	ZENER DIODE MTZJ3.9B
D4301	407 003 4507	DIODE DAP202K
FL430	645 011 3819	FLUORESCENT TUBE,FL DISPLAY
IC430	410 247 1102	IC M38184MA-215FP
IC431	409 346 2301	IC BU2090F
IC432	409 360 3704	IC BA3835S
L1401	645 001 4550	INDUCTOR,10U K
L4301	645 001 4581	INDUCTOR,100U K
Q4230	405 064 6201	TR 2SB1295-5
or	405 064 6300	TR 2SB1295-6
Q4231	405 064 6201	TR 2SB1295-5
or	405 064 6300	TR 2SB1295-6
Q4232	405 000 3608	TR DTC114YK
or	405 113 6008	TR FA1A4P
Q4233	405 000 3608	TR DTC114YK
or	405 113 6008	TR FA1A4P
Q4250	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
Q4260	405 002 0308	TR 2SA1037K-R
or	405 005 5508	TR 2SA812-M6
or	405 002 6706	TR 2SA1179-M6
S4300	614 240 1002	SWITCH,TACT,VOLUME(+)
S4301	614 240 1002	SWITCH,TACT,VOLUME(-)
S4302	614 240 1002	SWITCH,TACT,TUNE(+)/ COMPU.REC HIGH
S4303	614 240 1002	SWITCH,TACT,TUNE(-)/ COMPU.REC LOW

Ref. No.	Part No.	Description
S4304	614 240 1002	SWITCH,TACT,REC PAUSE
S4305	614 240 1002	SWITCH,TACT,REV MODE
S4306	614 240 1002	SWITCH,TACT,BASSXPANDER
S4307	614 240 1002	SWITCH,TACT,SOUND PRESET
S4308	614 240 1002	SWITCH,TACT,DOLBY NR
S4310	614 240 1002	SWITCH,TACT,TAPE DEC,FWD
S4311	614 240 1002	SWITCH,TACT,TAPE DEC,REV
S4312	614 240 1002	SWITCH,TACT,CD TRACK, F.FWD,TAPE FWD
S4313	614 240 1002	SWITCH,TACT,CD TRACK, TAPE REW
S4314	614 240 1002	SWITCH,TACT,TUNER BAND
S4315	614 240 1002	SWITCH,TACT,MEMORY
S4316	614 240 1002	SWITCH,TACT,TIMER
S4317	614 240 1002	SWITCH,TACT,CLOCK
S4318	614 240 1002	SWITCH,TACT,FUNCTION
S4320	614 240 1002	SWITCH,TACT,CD PLAY/PAUSE
S4321	614 240 1002	SWITCH,TACT,CD/TAPE,STOP
S4322	614 240 1002	SWITCH,TACT,POWER
SE430	407 138 4700	PHOTO DIODE SPS-420-1, IR
X4241	614 219 7936	RESONATOR,XTAL,32.768HZ
X4242	614 215 5523	RESONATOR,CERAMIC,4.19MHZ

CD MAIN P.W.BOARD ASSY

Ref. No.	Part No.	Description
81	614 271 2825	ASSY,PWB,CD MAIN
C1153	403 058 5209	POLYESTER 0.15U K 50V
CN101	645 005 8110	PLUG,4P,TP1-4
CN111	645 010 1472	SOCKET,FPC 13P,CD PICKUP
CN113	645 005 8127	PLUG,6P
CN114	645 012 2736	SOCKET,DIP 8P
CN115	614 035 4935	SOCKET,DIP 4P
CN124	614 274 2679	ASSY,WIRE,8P
CN125	614 270 1669	ASSY,WIRE,4P
CN131	645 009 0158	SOCKET,14P
CN132	645 009 0134	SOCKET,10P
CN198	614 274 7438	ASSY,CONNECTOR-S,6P
CN199	645 005 7373	PLUG,3P
D1351	407 099 5402	ZENER DIODE MTZJ6.2B
or	407 051 7208	ZENER DIODE GZS6.2Y
D1361	407 099 5105	ZENER DIODE MTZJ4.7B
or	407 051 6508	ZENER DIODE GZS4.7Y
D1371	407 099 4504	ZENER DIODE MTZJ3.9A
or	407 051 5808	ZENER DIODE GZS3.9X
D1601	⚠407 004 9709	DIODE DSK10C
D1602	⚠407 004 9709	DIODE DSK10C
D1603	⚠407 004 9709	DIODE DSK10C
IC101	409 327 3402	IC CXA1782BQ
IC102	⚠409 317 8509	IC BA6398FP
IC104	409 322 2707	IC CXD2518Q
IC106	409 039 7408	IC NJM4558D
or	409 018 4305	IC LA6458D
IC131	⚠409 127 1400	IC LB1648
IC132	⚠409 114 4803	IC LB1641
L1101	614 028 6748	FILTER,10U
Q1101	405 004 4601	TR 2SA608-F-SPA
or	405 003 5401	TR 2SA1317-U
or	405 006 1905	TR 2SA933S-S
or	405 006 1806	TR 2SA933S-R
or	405 002 1305	TR 2SA1048-Y
or	405 002 1107	TR 2SA1048-GR

PARTS LIST

Ref. No.	Part No.	Description
Q1102	405 004 4601	TR 2SA608-F-SPA
or	405 003 5401	TR 2SA1317-U
or	405 006 1905	TR 2SA933S-S
or	405 006 1806	TR 2SA933S-R
or	405 002 1305	TR 2SA1048-Y
or	405 002 1107	TR 2SA1048-GR
Q1201	405 009 5207	TR 2SB927-S
or	405 001 9302	TR 2SA1020-Y
Q1202	405 008 6809	TR 2SB808-F-SPA
Q1211	405 000 3806	TR DTC114YS
or	405 128 9001	TR RN1207
or	405 037 0809	TR 2SC4048
Q1321	405 019 3903	TR 2SC536-G-SPA
or	405 017 9709	TR 2SC3330-U
or	405 011 8609	TR 2SC1740S-S
or	405 011 8500	TR 2SC1740S-R
or	405 014 5209	TR 2SC2458-GR
or	405 014 5407	TR 2SC2458-Y
Q1351	405 000 0508	TR DTA114ES
or	405 078 2305	TR BN1A4M
or	405 001 1108	TR RN2202
Q1361	405 000 0508	TR DTA114ES
or	405 078 2305	TR BN1A4M
or	405 001 1108	TR RN2202
Q1371	405 000 0508	TR DTA114ES
or	405 078 2305	TR BN1A4M
or	405 001 1108	TR RN2202
R1350	⚠402 048 1603	RESISTOR 10 J- 1W
R1371	⚠402 049 2500	RESISTOR 18 J- 2W
VR101	645 006 2520	VR,SEMI,100K N
X1401	614 254 6932	RESONATOR,CERAMIC,33.86MHZ
or	614 259 2137	RESONATOR,CERAMIC,33.86MHZ

DISC LED P.W.BOARD ASSY

Ref. No.	Part No.	Description
82	614 271 2771	ASSY,DISC LED
CN400	645 005 8127	PLUG,6P
D4001	408 023 4904	LED SLP-738F-81-AB,DISC 1
D4002	408 023 4904	LED SLP-738F-81-AB,DISC 2
D4003	408 023 4904	LED SLP-738F-81-AB,DISC 3
D4004	408 023 4904	LED SLP-738F-81-AB,DISC 4
D4005	408 023 4904	LED SLP-738F-81-AB,DISC 5
D4006	408 023 4904	LED SLP-738F-81-AB,DISC 6
S4001	614 240 1002	SWITCH,TACT,CD OPEN/CLOSE
S4002	614 240 1002	SWITCH,TACT,DISC 1
S4003	614 240 1002	SWITCH,TACT,DISC 2
S4004	614 240 1002	SWITCH,TACT,DISC 3

BACK LED P.W.BOARD ASSY

Ref. No.	Part No.	Description
83	614 271 2788	ASSY,BACK LED,CHANGER MECHANISM
CN410	614 274 7421	ASSY,CONNECTOR-S,3P
D4101	407 173 8305	LED SLP-335C-51,GREEN
D4102	407 173 8305	LED SLP-335C-51,GREEN
D4103	407 153 5508	LED SLP-881A-37,RED
D4104	407 153 5508	LED SLP-881A-37,RED

SUPPORT P.W.BOARD ASSY

Ref. No.	Part No.	Description
84	614 278 4624	ASSY,PWB SUPPORT
CN178	614 278 5621	ASSY,WIRE
CN179	645 006 0915	PLUG,4P
Q1701	405 000 3400	TR DTC114TS
or	405 035 1600	TR RN1211
or	405 037 0205	TR 2SC3860
or	405 107 8704	TR BA1A4Z
Q1702	405 000 5008	TR DTC143ES

SPEAKER BOX ASSY (SX-MS5L/XE, SX-MS5R/XE) (XE)

Ref. No.	Part No.	Description
91	614 271 5710	CABINET,FRONT,LEFT (SX-MS5L)
92	614 272 3302	CABINET,FRONT,RIGHT (SX-MS5R)
93	614 272 9571	ASSY,CABINET,REAR
94	614 272 9595	ASSY,GRILLE,PLATE,LEFT (SX-MS5L)
95	614 272 9601	ASSY,GRILLE,PLATE,RIGHT (SX-MS5R)
96	614 258 1162	CORD,2PCONNECTOR
97	645 011 9934	SPEAKER,4 OHM
98	419 002 0206	PIEZO BUZZER 7MB-20-5R5
99	614 228 5251	CUSHION,10X10X11.5MM
Y91	411 021 4906	SCR S-TPG BIN 3X20MM, CABINET/REAR
Y92	411 021 4005	SCR S-TPG BIN 3X12MM, GRILLE/CABINET
Y93	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, SPEAKER/GRILLE
	645 012 4648	POLY SHEET,900X400MM (XE)
	614 211 3455	SHEET,900X400MM (UK)

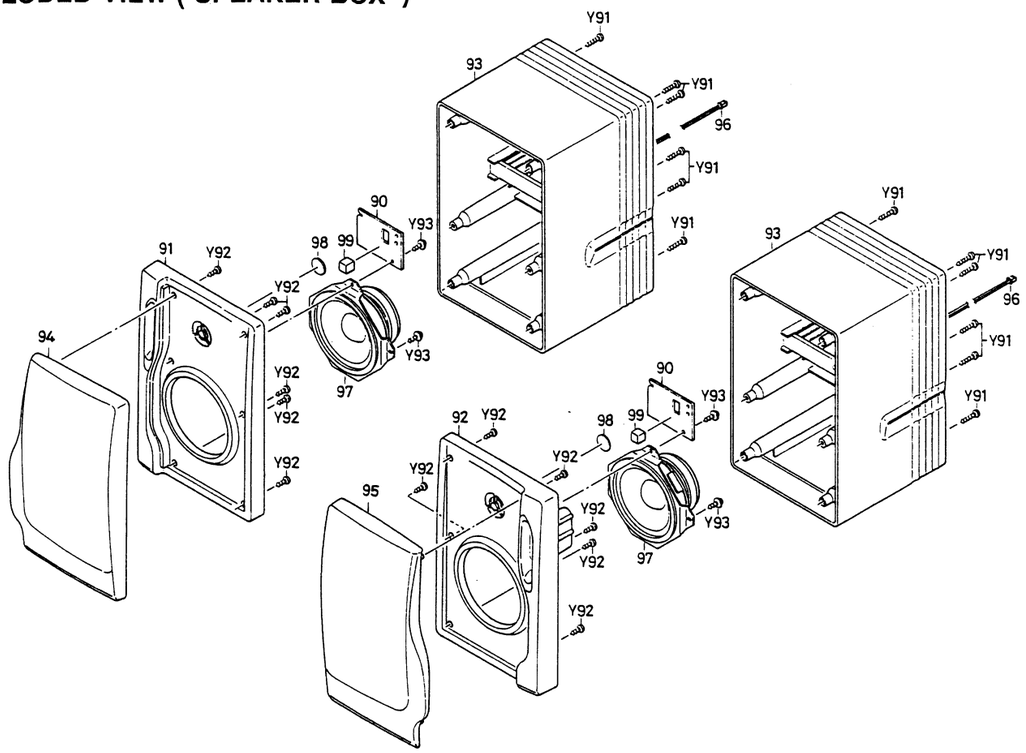
SPEAKER BOX ASSY (SX-MS5L/UK,SX-MS5R/UK) (UK)

Ref. No.	Part No.	Description
91	614 271 5710	CABINET,FRONT,LEFT (SX-MS5L)
92	614 272 3302	CABINET,FRONT,RIGHT (SX-MS5R)
93	614 272 9571	ASSY,CABINET,REAR
94	614 272 9595	ASSY,GRILLE,PLATE,LEFT (SX-MS5L)
95	614 272 9601	ASSY,GRILLE,PLATE,RIGHT (SX-MS5R)
96	614 258 1162	CORD,2PCONNECTOR
97	645 011 9934	SPEAKER,4 OHM
98	419 002 0206	PIEZO BUZZER 7MB-20-5R5
99	614 228 5251	CUSHION,10X10X11.5MM
Y91	411 021 4906	SCR S-TPG BIN 3X20MM, CABINET/REAR
Y92	411 021 4005	SCR S-TPG BIN 3X12MM, GRILLE/CABINET
Y93	411 020 9100	SCR S-TPG BRZ+FLG 3X12MM, SPEAKER/GRILLE
	645 012 4648	POLY SHEET,900X400MM (XE)
	614 211 3455	SHEET,900X400MM (UK)

SPEAKER NETWORK P.W.BOARD ASSY

Ref. No.	Part No.	Description
90	614 278 4617	PWB,SPEAKER NETWORK
C9001	403 086 5509	NP-ELECT 2.2U M 50V
L9001	614 027 9214	CHOKE COIL
R9001	402 045 2603	RESISTOR 4.7 J- 1W

EXPLODED VIEW (SPEAKER BOX)

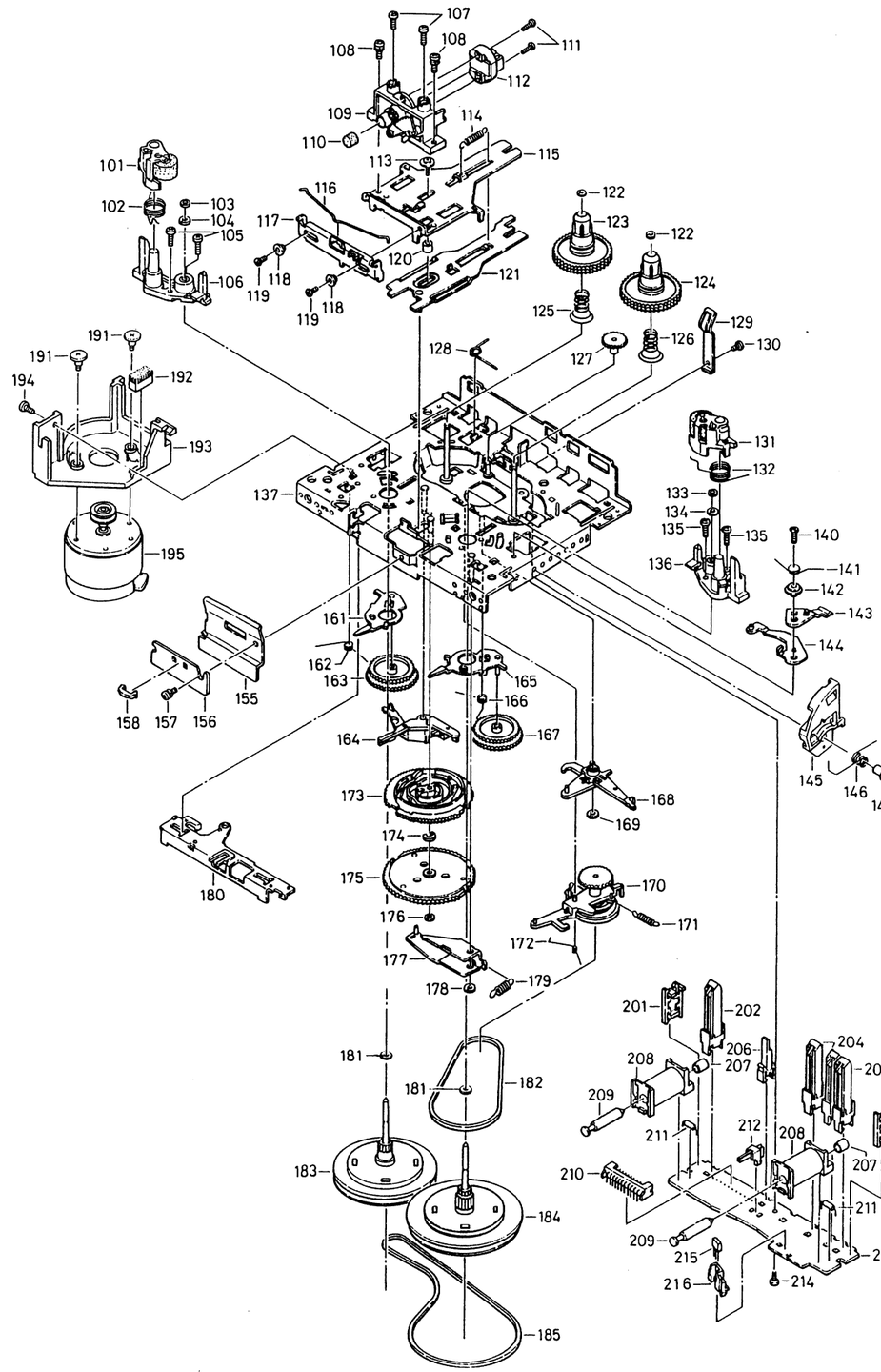


TEST CABLES

EXTENSION CABLES

No.	PART No.	DESCRIPTION
1	614 275 5099	ASSY, CONNECTOR, 14P
2	614 275 5105	ASSY, CONNECTOR, 10P
3	614 275 5112	ASSY, CONNECTOR, 13P, FPC
4	614 275 5129	ASSY, CONNECTOR, 6P
5	614 279 4494	ASSY, CONNECTOR, 10P
6	645 009 0752	FFC (FLEXIBLE FLAT CABLE), 11P (300mm)
7	645 016 7904	FFC (FLEXIBLE FLAT CABLE), 9P (200mm)

EXPLODED VIEW (TAPE MECHANISM)



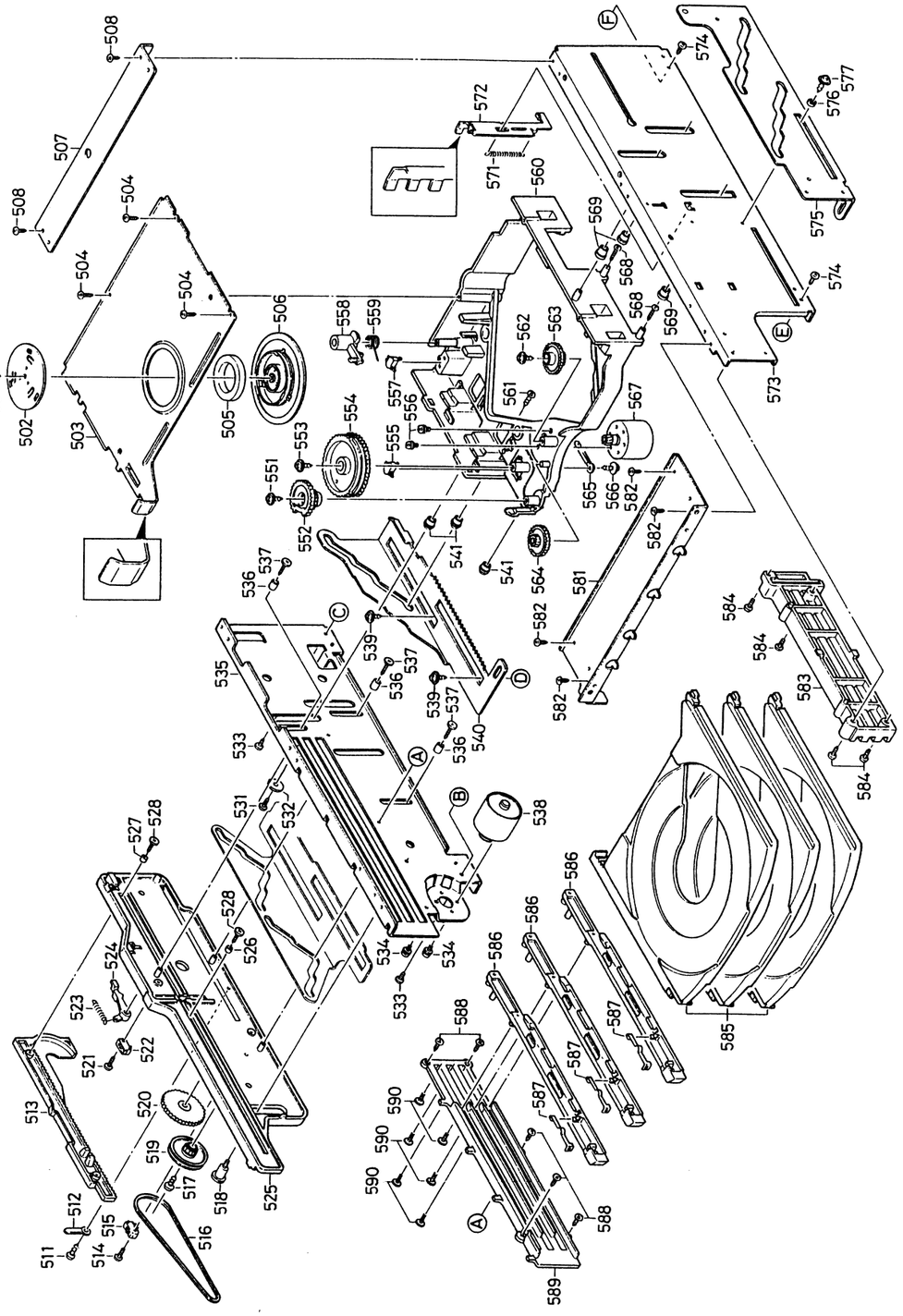
PARTS LIST

TAPE MECHANISM (TM-MS5TN-SH)

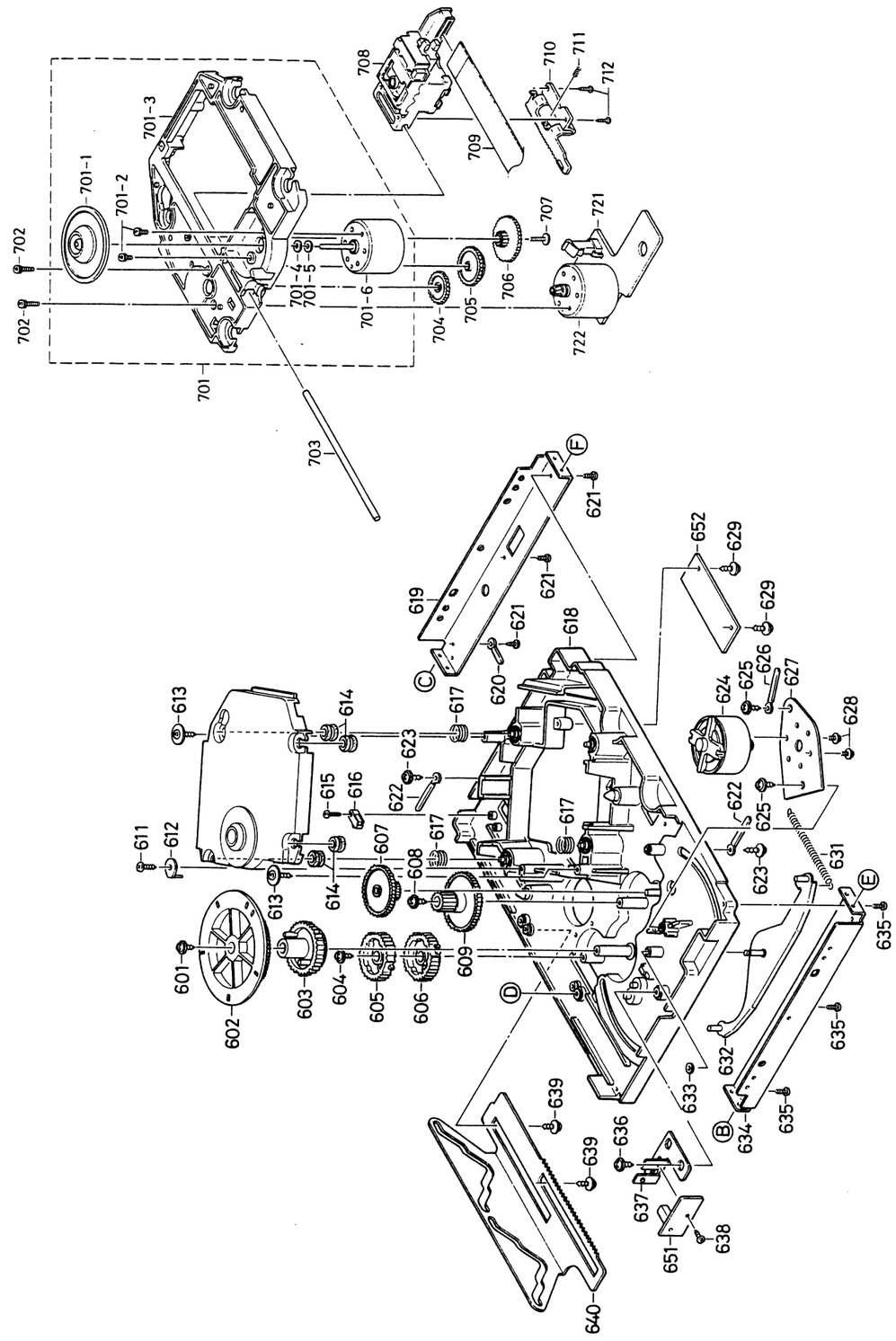
Ref. No.	Part No.	Description
101	645 012 1531	ASSY,PINCH ROLLER ARM(R)
102	645 012 1401	P ARM(R)SPRING
103	645 009 7751	NYLON WASHER 2.05X3.5X0.5MM
104	645 009 8031	HL WASHER 1.7X3.5X0.5MM
105	645 012 1906	C TAPP SCREW M2X5
106	645 012 1692	ASSY,FL METAL(R)
107	645 012 1920	(+)(-)SCREW(SMALL)M2X6
108	645 012 1890	TAMS SCREW M2X5
109	645 012 1494	ASSY,HEAD BASE
110	645 012 1364	SPACER,R/P & E HEAD
111	645 012 1883	HEAD COLLAR SCREW(S), R/P & E HEAD
112	614 237 8670	HEAD,R/P&E,ROTARY
113	645 009 7720	CAMERA S TAP SCREW G 2X5MM
114	645 012 1371	RC SPRING
115	645 012 1463	HEAD PANEL(A)
116	645 012 1517	PINCH ROLLER SPRING
117	645 012 1388	CHP LEVER
118	645 012 1340	CHP LEVER COLLAR
119	645 009 7027	CAMERA TS M SCREW 1.7X3MM
120	645 009 8895	PANEL COLLAR
121	645 012 1500	ASSY,HEAD PANEL(B)
122	645 009 7072	HL WASHER CUT 1.4X3.1X0.5MM
123	645 012 1623	ASSY,TAKE-UP REEL(R)
124	645 012 1616	ASSY,TAKE-UP REEL(F)
125	645 012 1593	BT SPRING(R),BACK TENSION
126	645 012 1609	BT SPRING(F),BACK TENSION
127	645 012 1555	FF GEAR
128	645 012 1470	HEAD PANEL SPRING
129	645 012 1449	PACK SPRING,CASSETTE
130	645 011 1242	C TAPP SCREW M2X3
131	645 012 1524	ASSY,PINCH ROLLER ARM(F)
132	645 012 1395	P ARM(F)SPRING
133	645 009 7744	NYLON WASHER 2.1X3.5X0.5MM
134	645 012 1951	HL WASHER CUT 1.8X4X0.5MM
135	645 012 1906	C TAPP SCREW M2X5
136	645 012 1685	ASSY,FL METAL(F)
137	645 012 2514	ASSY,CHASSIS
140	645 009 7713	CAMERA S TAP SCREW G 2X6MM
141	645 009 7676	E STOPPER SPRING(F)
142	645 009 8017	E STOPPER COLLAR
143	645 009 7690	E STOPPER A(F)S
144	645 009 7638	E STOPPER B(F)
145	645 009 7652	LOCK LEVER(R)
146	645 009 7645	E LEVER SPRING(R)
147	645 012 1746	LOCK LEVER COLLAR
148	645 009 7706	C TAP BIND SCREW 2.3X10MM
155	645 012 1487	SHIELD PLATE,ROTARY HEAD
156	645 009 6907	RELAY BOARD,HEAD LEAD

Ref. No.	Part No.	Description
157	645 012 1913	S TAMP TAPP SCREW M2X5
158	645 012 1357	WIRE CLAMP,ROTARY HEAD
161	645 012 1647	ASSY,T GEAR ARM(R)
162	645 012 1586	TG ARM(R)SPRING
163	645 012 1548	T GEAR
164	645 012 1777	M TRIGGER ARM
165	645 012 1630	ASSY,T GEAR ARM(F)
166	645 012 1579	TG ARM(F)SPRING
167	645 012 1548	T GEAR
168	645 012 1562	RF TRIGGER ARM
169	645 012 1937	HL WASHER CUT 2.1X5X0.4MM
170	645 012 1678	ASSY,RF CLUTCH
171	645 012 1654	RF PULLEY ARM SPRING
172	645 012 1814	TRIGGER ARM SPRING
173	645 012 1760	M GEAR
174	645 012 1876	E RING S2.0
175	645 012 1791	RF CAM GEAR
176	645 012 1944	HLW CUT 1.55X3.5X0.5MM
177	645 012 1784	P KICK LEVER
178	645 012 1937	HL WASHER CUT 2.1X5X0.4MM
179	645 012 1432	PK LEVER SPRING
180	645 012 1753	CH SLIDE LEVER
181	645 009 7768	HL WASHER 2.3X3.8X0.13MM
182	645 012 1661	RF BELT
183	645 012 1715	ASSY,FLYWHEEL(R)
184	645 012 1708	ASSY,FLYWHEEL(F)
185	645 009 6990	MAIN BELT
191	645 011 3727	MOTOR COLLER SCREW
192	645 012 1333	MAT,MOTOR
193	645 012 1722	MOTOR BRACKET
194	645 012 1906	C TAPP SCREW M2X5
195	614 279 4807	MOTOR ASSY(WITH PULLEY)
201	645 012 1845	P BASE STUD
202	645 011 1631	LEAF SWITCH,UN-REC"A",S5
203	645 011 1631	LEAF SWITCH,UN-REC"B",S6
204	645 011 1631	LEAF SWITCH,CrO2,PACK,S1,S2
205	645 012 1845	P BASE STUD
206	645 012 1869	LEAF SWITCH,PLAY,S4
207	645 012 1425	PLUNGER HOLDER,SOLENOID
208	645 012 1807	SOLENOID,PL1,PL2
209	645 012 1418	PLUNGER,SOLENOID
210	645 006 0984	PLUG,11P
211	407 004 9105	DIODE DSF10C (D1,D2)
212	645 012 1852	LEAF SWITCH,F.FWD,S3
213	645 012 1821	P BASE,MECHANISM PWB
214	645 009 2312	C TAP SCREW M2X4
215	409 128 5209	IC LB9051A (IC1)
216	645 012 1838	IC PROTECTOR

EXPLODED VIEW (CD CHANGER MECHANISM)



EXPLODED VIEW (CD CHANGER & BASE MECHANISM)



CD CHANGER MECHANISM (PM-CDCH3/SH)

Ref. No.	Part No.	Description
501	411 022 7500	SCR S-TPG PAN 2X4MM, CHUCK PULLEY FIX
502	614 266 8061	HOLDER,CHUCK PLATE PULLEY
503	614 279 6016	HOLDER,CHUCK BRACKET
504	411 022 7807	SCR S-TPG PAN 2X6MM, CHUCK BRACKET FIX
505	645 009 9809	MAGNET CHUCK,CHUCKING
506	614 272 1674	ASSY,PULLEY,CHUCK
507	614 266 1918	JOINT,B-TOP ENCOURAGER
508	411 028 2905	SCR S-TPG PAN 2X4MM, JOINT FIX
511	411 021 0809	SCR S-TPG BIN 2X6MM,LUG FIX
512	614 129 9341	LUG,OPEN/CLOSE SWITCH LOAD
513	614 266 1833	GEAR,OPEN/CLOSE RACK
514	411 021 1202	SCR S-TPG BIN 2X8MM, OPEN/CLOSE SW FIX
515	645 010 6491	SWITCH,LEVER,OPEN END
516	614 268 5594	BELT,SQUARE,OPEN/CLOSE
517	411 021 2704	SCR S-TPG BIN 2.6X6MM, PULLEY FIX
518	412 004 5705	SPECIAL SCREW,GEAR BLOCK FIX
519	614 266 1987	PULLEY,OPEN/CLOSE IDLER PULLEY
520	614 266 1826	GEAR,OPEN/CLODE IDLER
521	411 021 1202	SCR S-TPG BIN 2X8MM, OPEN/CLOSE SW FIX
522	645 010 6491	SWITCH,LEVER,CLOSE END
523	614 268 0179	SPRING,TENSION,LEVER PULL
524	614 266 2878	LEVER,OPEN/CLOSE LOCK LEVER
525	614 266 1970	MOUNTING,GEAR BLOCK BRACKET
526	614 273 5992	PIPE,GEAR RACK GUIDE(F)
527	614 270 2222	PIPE,GEAR RACK GUIDE(R)
528	412 047 3904	SPECIAL SCREW,2X8MM, GEAR RACK FIX
531	411 022 7807	SCR S-TPG PAN 2X6MM, TRAY HOLDER
532	411 091 9702	WASHER V 2X8X0.5MM
533	411 028 2905	SCR S-TPG PAN 2X4MM, MOUNTING FIX
534	411 044 7007	SCR PAN+SW 2X3MM, OPEN/CLOSE MOTOR FIX
535	614 266 1949	MOUNTING,LEFT SIDE BRACKET
536	614 268 0476	PIPE,OPEN/CLOSE BRAKET GUIDE
537	412 047 3904	SPECIAL SCREW,2X8MM, MOUNTING FIX
538	645 009 1186	ASSY,MOTOR,OPEN/COLSE
539	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM,SLIDE FIX
540	614 266 1994	SLIDE,TRAY HOLDER
541	614 277 9460	PIPE,TRAY HOLDER GUIDE
551	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, GEAR FIX
552	614 266 1819	GEAR,LOAD/UNLOAD DRIVE
553	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, GEAR FIX
554	614 266 1802	GEAR,LOAD/UNLOAD CAM
555	614 214 9379	SWITCH,UNLOAD END
556	411 044 7205	SCR PAN+SW 2X4MM, LOAD/UNLOAD MTR FIX
557	614 214 9379	SWITCH,LOAD END
558	614 266 1932	LEVER,LOCK
559	614 268 0186	SPRING,WIRE, LOAD/UN-LOAD LOCK LEVER
560	614 266 1963	MOUNTING,TRAY HOLDER
561	411 022 8408	SCR S-TPG PAN 2X8MM, TRAY HOLDER
562	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, GEAR FIX
563	614 266 8030	GEAR,LOAD/UNLOAD IDLER1
564	614 266 1796	GEAR,LOAD/UNLOAD IDLER2
565	614 129 9136	LUG,LEAD MTG.
566	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, LUG FIX
567	645 009 1193	ASSY,MOTOR,LOAD/UNLOAD
568	411 022 8408	SCR S-TPG PAN 2X8MM, TRAY HOLDER
569	614 268 0469	PIPE,TRAY HOLDER GUIDE
571	614 268 0162	SPRING,TENSION,STOPPER PULL
572	614 279 0595	STOPPER,DISC STOPPER
573	614 266 1956	MOUNTING,RIGHT SIDE BRAKET
574	411 028 2905	SCR S-TPG PAN 2X4MM, MOUNTING FIX
575	614 268 2906	ASSY,SLIDE,RIGHT
576	614 270 2239	PIPE,RIGHT SLIDE GUIDE
577	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, RIGHT SLIDE FIX
581	614 266 1901	JOINT,F-TOP ENCOURAGER
582	411 028 2905	SCR S-TPG PAN 2X4MM, JOINT FIX
583	614 266 1864	HOLDER,RIGHT,TRAY GUIDE
584	411 028 3100	SCR S-TPG PAN 2X6MM, HOLDER FIX
585	614 266 2038	TRAY
586	614 266 1871	HOLDER,TRAY GUIDE
587	614 266 8924	SPRING,PLATE,TRAY HOLD
588	411 028 2905	SCR S-TPG PAN 2X4MM, HOLDER FIX
589	614 266 1857	HOLDER,LEFT,TRAY GUIDE
590	412 047 3904	SPECIAL SCREW 2X8MM, HOLDER FIX
601	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, GEAR FIX
602	614 266 1758	GEAR,UP/DOWN CAM (1)
603	614 266 1765	GEAR,UP/DOWN CAM (2)
604	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, GEAR FIX
605	614 266 1772	GEAR,UP/DOWN DRIVE (1)
606	614 266 1789	GEAR,UP/DOWN DRIVE (2)
607	614 266 1734	GEAR,UP/DOWN IDLER 1
608	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, GEAR FIX
609	614 266 1741	GEAR,UP/DOWN IDLER 2
611	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM,HOLDER FIX
612	614 267 6998	HOLDER,BASE MECHANISM FIX
613	614 279 1202	SPECIAL SCREW,BLACK, BASE MECHANISM FIX
614	614 237 7031	CUSHION,RUBBER,FLOATING
615	411 021 1202	SCR S-TPG BIN 2X8MM, PLAY SW FIX
616	645 010 6491	SWITCH,LEVER,PLAY
617	614 247 4907	SPRING,COMP,FLOATING
618	614 266 1727	CHASSIS,BOTTOM CHASSIS
619	614 266 1888	JOINT,BOTTOM BACK
620	614 129 9341	LUG,OPEN/CLOSE SWITCH LEAD
621	411 022 7807	SCR S-TPG PAN 2X6MM, JOINT FIX
622	614 129 9136	LUG,LOAD/UN-LOAD SWITCH LEAD
623	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, LUG FIX
624	614 268 2890	ASSY,MOTOR,UP/DOWN

Ref. No.	Part No.	Description
625	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, BRACKET MOTOR FIX
626	614 129 9136	LUG,SENSOR LEAD
627	614 266 8054	HOLDER,BRACKET MOTOR
628	411 102 6300	SCR PAN-FLG 2.6X2.8MM, UP/DOUN MOTOR FIX
629	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM,CHUKEI PWB FIX
631	614 268 0155	SPRING,TENSION, SYNCRO LEVER PULL
632	614 268 2883	ASSY,LEVER,SYNCRO
633	614 127 1576	WASHER,LEVER ASSY FIX
634	614 272 6600	JOINT,BOTTOM FRONT
635	411 022 7807	SCR S-TPG PAN 2X6MM, JOINT FIX
636	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, SENSOR BK FIX
637	614 266 9907	HOLDER,SENSOR BRACKET
638	411 028 2905	SCR S-TPG PAN 2X4MM, SENSOR PWB FIX
639	411 098 8807	SCR S-TPG BRZ+FLG 3X6MM, SLIDE FIX
640	614 266 2007	SLIDE,TRAY SLISE
	614 269 6026	ASSY,WIRE,5P,SENSOR, UP/DOWN MOTOR
	614 269 6033	ASSY,WIRE,6P, LOAD/UNLOAD/PLAY SWITCH
	614 269 6040	ASSY,WIRE,4P, LOAD/UNLOAD,UP/DOWN MOTOR
	614 269 6057	ASSY,WIRE,4P, OPEN/CLOSE SWITCH

CD SENSOR P.W.BOARD ASSY

Ref. No.	Part No.	Description
651	614 270 1928	ASSY,PWB,SENSOR
D191	407 177 6109	PHOTO COUPLE GP1A53E

CD CONNECTOR P.W.BOARD ASSY

Ref. No.	Part No.	Description
652	614 267 6646	ASSY,PWB CD,CONNECTOR, CHANGER
CN191	645 006 0915	PLUG,4P,LOAD/UNLOAD SWITCH
CN192	645 004 2706	PLUG,4P,LOAD/UNLOAD,UP/DOWN MOTOR
CN193	645 006 0939	PLUG,6P,OPEN/CLOSE/PLAY SWITCH
CN194	645 006 0922	PLUG,5P,SENSOR,UP/DOWN MOTOR
CN195	645 006 0915	PLUG,4P,CD PWB
CN196	645 006 0953	PLUG,8P,CD PWB

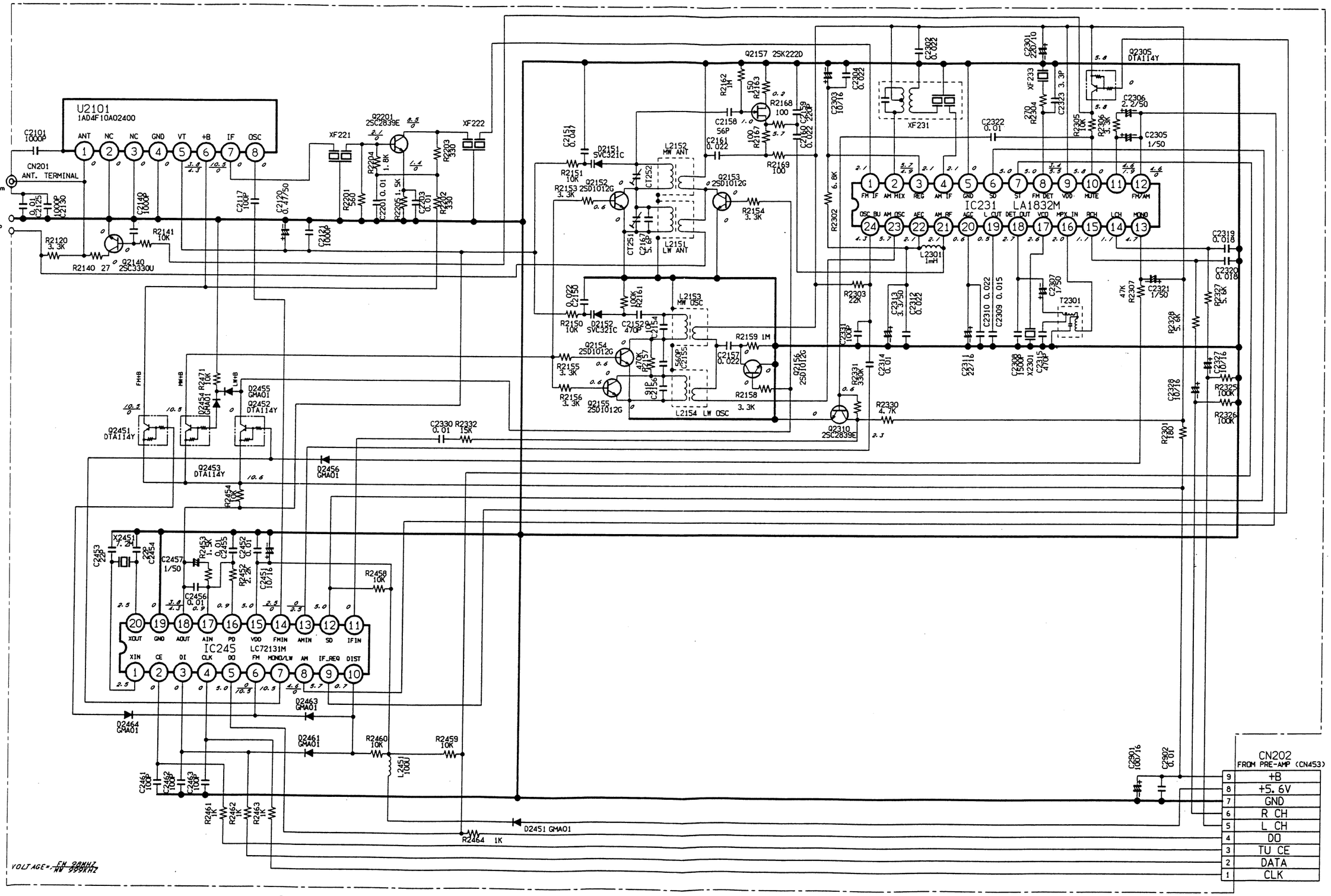
CD BASE MECHANISM (PM-CDBM94D2SH)

Ref. No.	Part No.	Description
701	614 270 2031	ASSY,CHASSIS,BASE MECHANISM
701-1	614 268 3354	ASSY,TURNTABLE,SPINDLE
701-2	411 044 7502	SCR PAN+SW 2X5MM, SPINDLE MOTOR FIX
701-3	614 262 2582	CHASSIS,BASE MECHANISM
701-4	412 032 0208	SPECIAL WASHER,1.9X5X0.3MM
701-5	412 014 5603	SPECIAL WASHER,TURNTABLE STOPPER
701-6	645 007 7821	MOTOR,CD-SPINDLE DC 0.2W, SPINDLE MOTOR
702	411 044 8004	SCR PAN+SW 2X8MM, SLED MOTOR FIX
703	614 237 7024	SHAFT,PICK-UP RAIL
704	614 237 7093	GEAR,SLED RETARD GEAR 1
705	614 237 7109	GEAR,SLED RETARD GEAR 2
706	614 237 7116	GEAR,SLED
707	412 047 3904	SPECIAL SCREW 2X8MM, SLED GEAR FIX
708	645 006 7983	PICKUP,LASER,SF-P100
709	645 009 9960	FLEXIBLE FLAT CABLE,13P, PICK-UP
710	614 262 2599	GEAR,RACK PICK-UP RACK GEAR
711	614 238 6934	SPRING,COMP,PICK-UP RACK GEAR
712	411 152 4301	SCR S-TPG PAN PCS 1.7X6MM, PICK RACK GEAR FIX
722	645 007 7814	ASSY,MOTOR CD-SLED
	614 270 2543	ASSY,CONNECTOR-S,6P, BASE MECHANISM

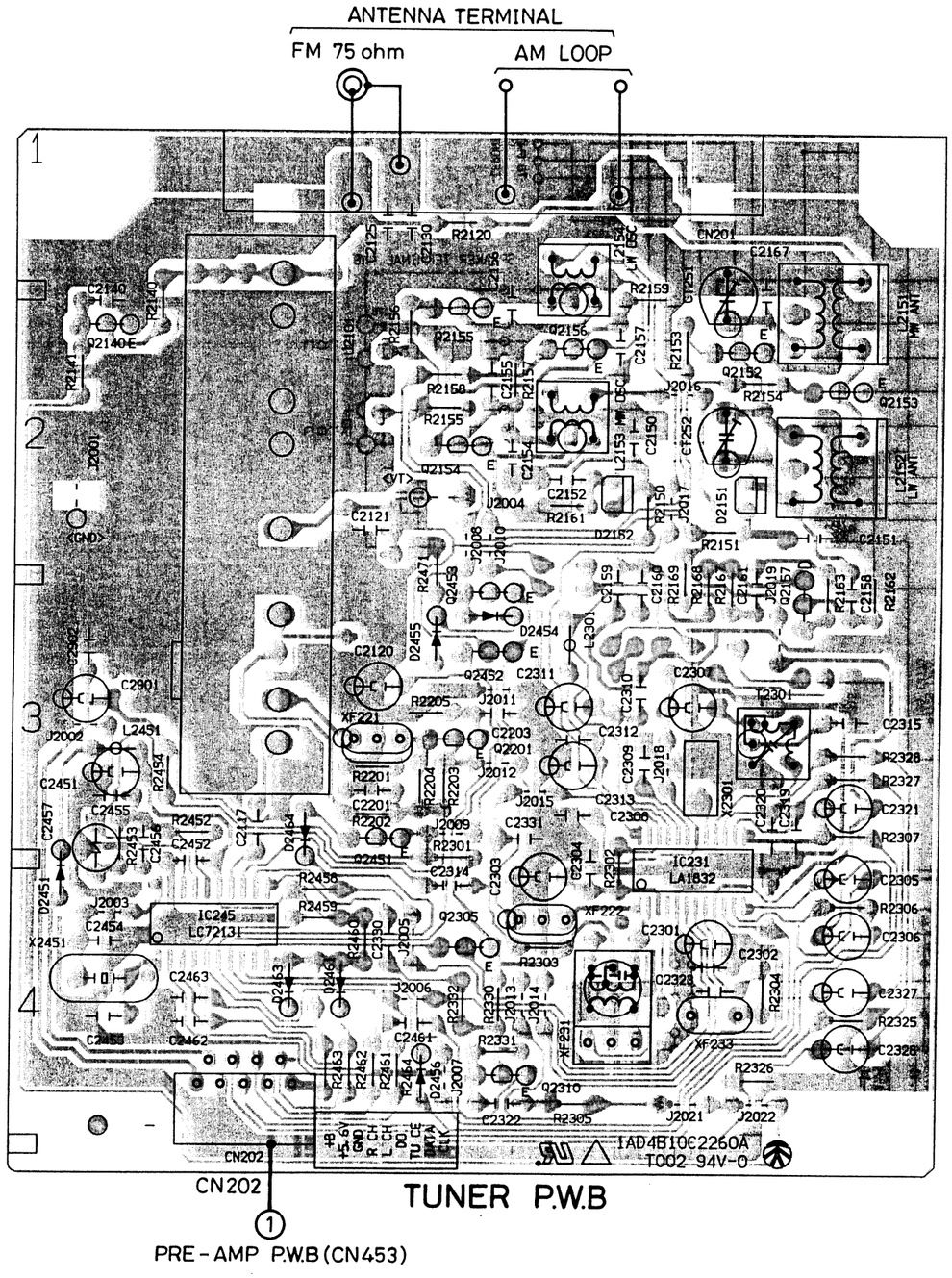
BASE MECHANISM P.W.BOARD ASSY

Ref. No.	Part No.	Description
721	614 254 0664	ASSY,PWB,MOTOR & LIMIT SWITCH
CN001	645 006 0939	PLUG,6P
S001	614 231 4005	SWITCH,LEAF,LIMIT SWITCH

SCHEMATIC DIAGRAM (TUNER)

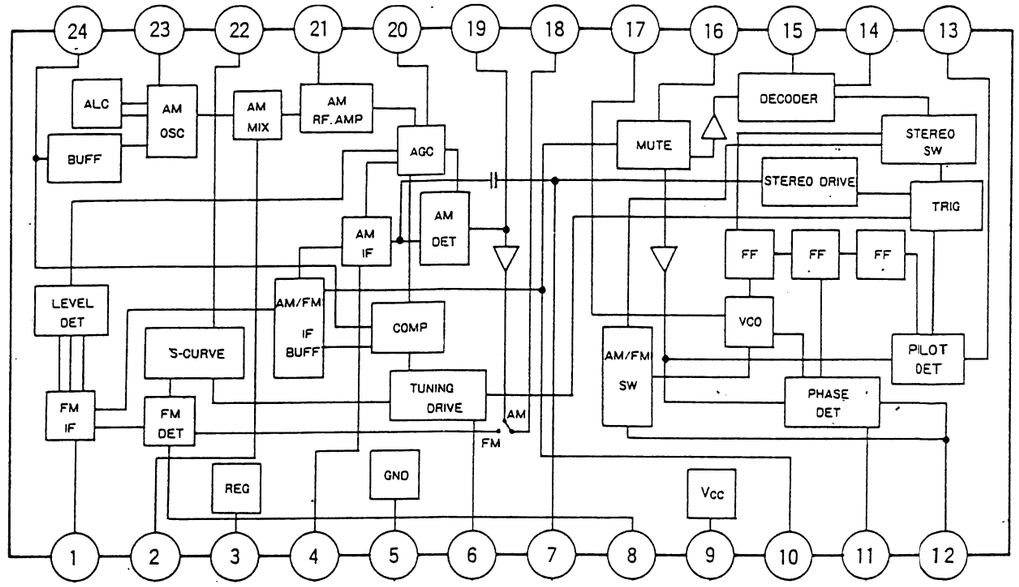

U2101
1AD4F10A02400
ANT NC NC GND VT +B IF OSC
CN201
ANT. TERMINAL
FM 75ohm
AM LOOP
IC231 LA1832M
FM IF AM MIX REG AM IF GND SD ST FM DET VDD MUTE FM/AM
OSC BU AM OSC AFC AM RF AGC L OUT DET OUT VCO MPX IN RCH LCH MONO
IC245 LC72131M
XOUT GND AOUT AIN PD VDD FMIN AMIN SD IFIN
XIN CE DI CLK DO FM MONO/LW AM IF_REQ DIST
CN202
FROM PRE-AMP (CN453)
9 +B
8 +5.6V
7 GND
6 R CH
5 L CH
4 DO
3 TU CE
2 DATA
1 CLK
VOLTAGE=FM 98MHZ AM 999KHZ

WIRING DIAGRAM (TUNER)

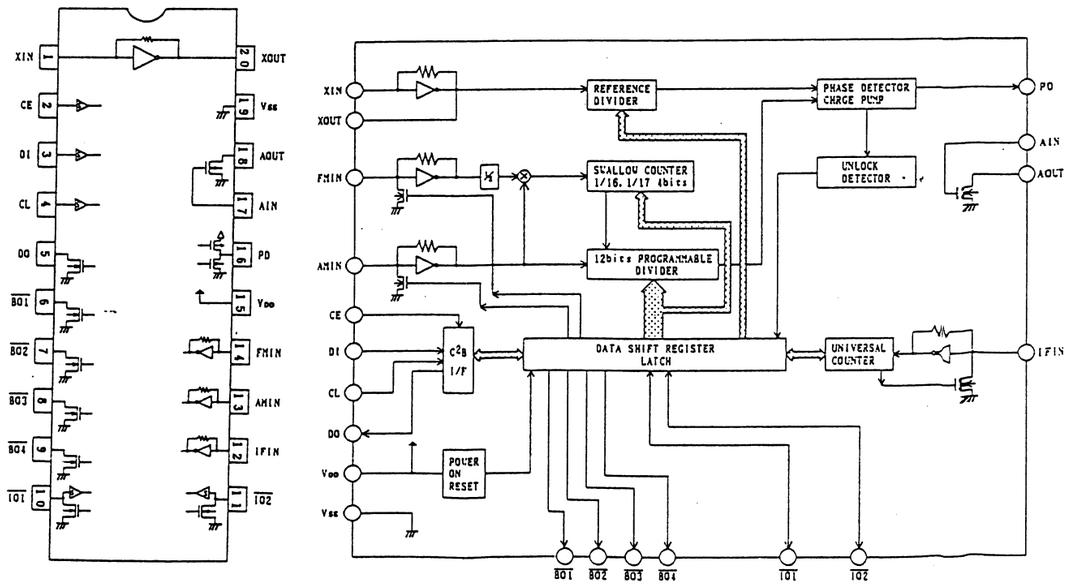


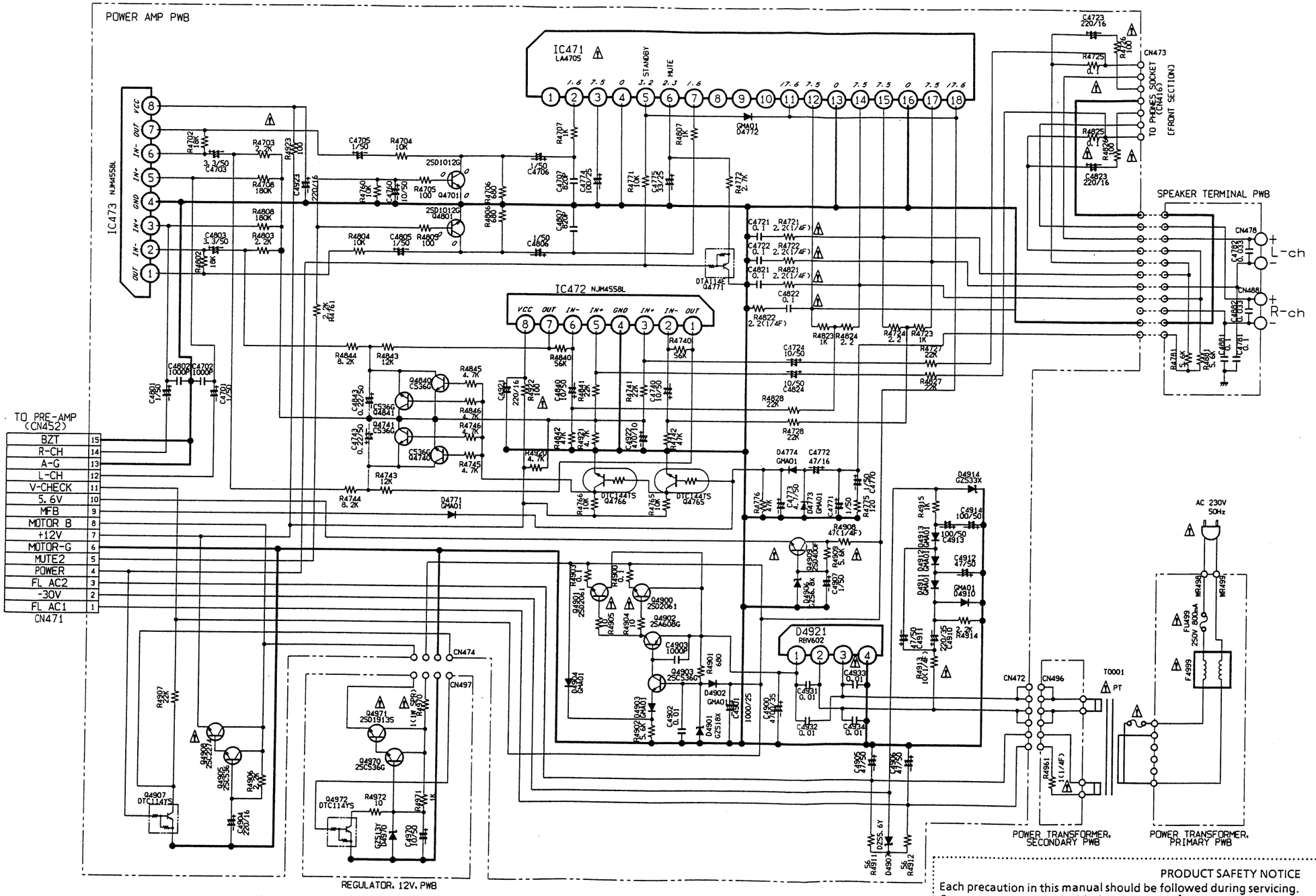
IC BLOCK DIAGRAM & DESCRIPTION

IC231 LA1832 (AM/FM IF & FM MPX)



IC245 LC72131M (PLL SYNTHSIZER)





PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.
Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance.
When replacing a component identified ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that aredesignated in the parts list in this manual.

PHONES SOCKET P.W.B

1AD4B10C221F0DA

HEADPHONE

SP SW
SP SW
L-CH
GND
R-CH
SP SW
SP SW

T002 94V-0

CN416
CN415

REGULATOR, 12V P.W.B

CN497

1AD4B10C2220G
T002 94V-0

POWER AMP P.W.B

1AD4B10C2220BA
T002 94V-0

CN472
CN473
CN474

SPEAKER TERMINAL P.W.B

1AD4B10C2220FA
T002 94V-0

L-CH R-CH
SPEAKER TERMINAL

CN471
CN496

2 PRE-AMP P.W.B (CN452)

AC 230V 50Hz

POWER TRANSFORMER, PRIMALY P.W.B

1AD4B10C2220D
T002 94V-0

T800mA L 250V

BW
BL

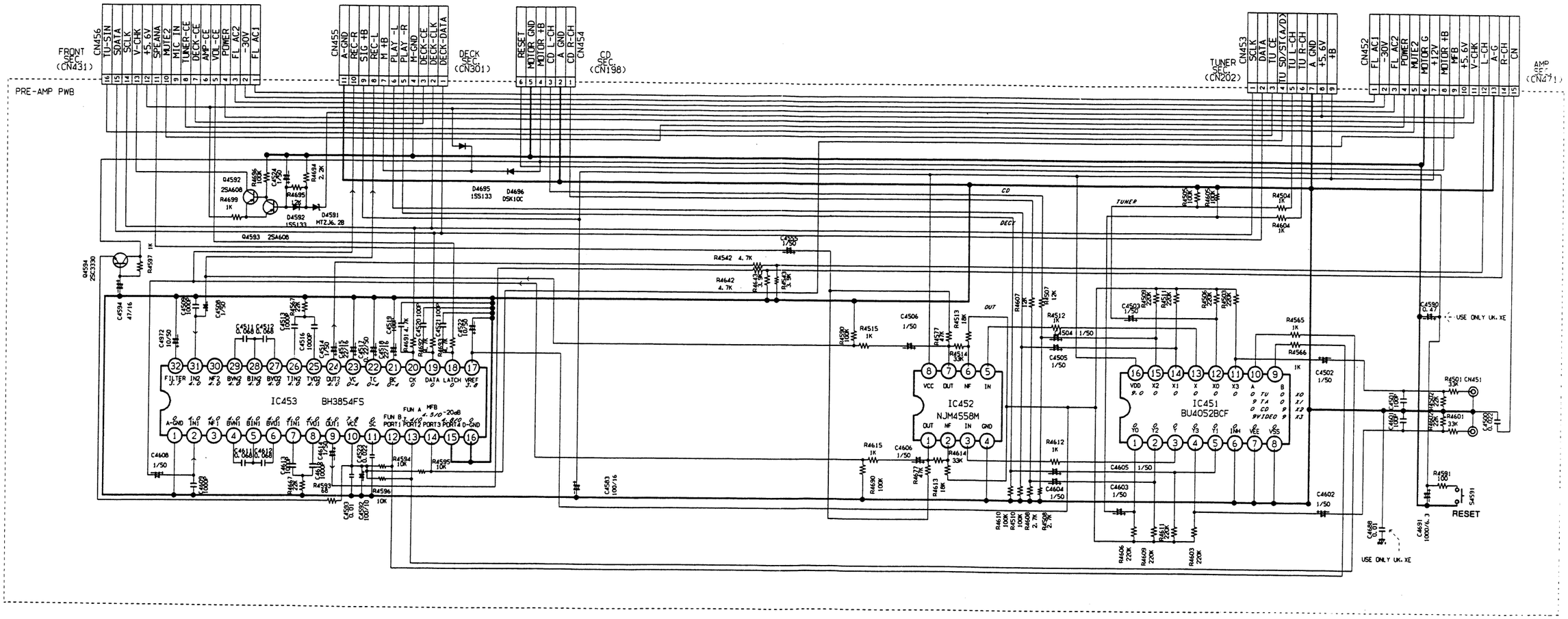
WR499
WR498
FU499
F4999

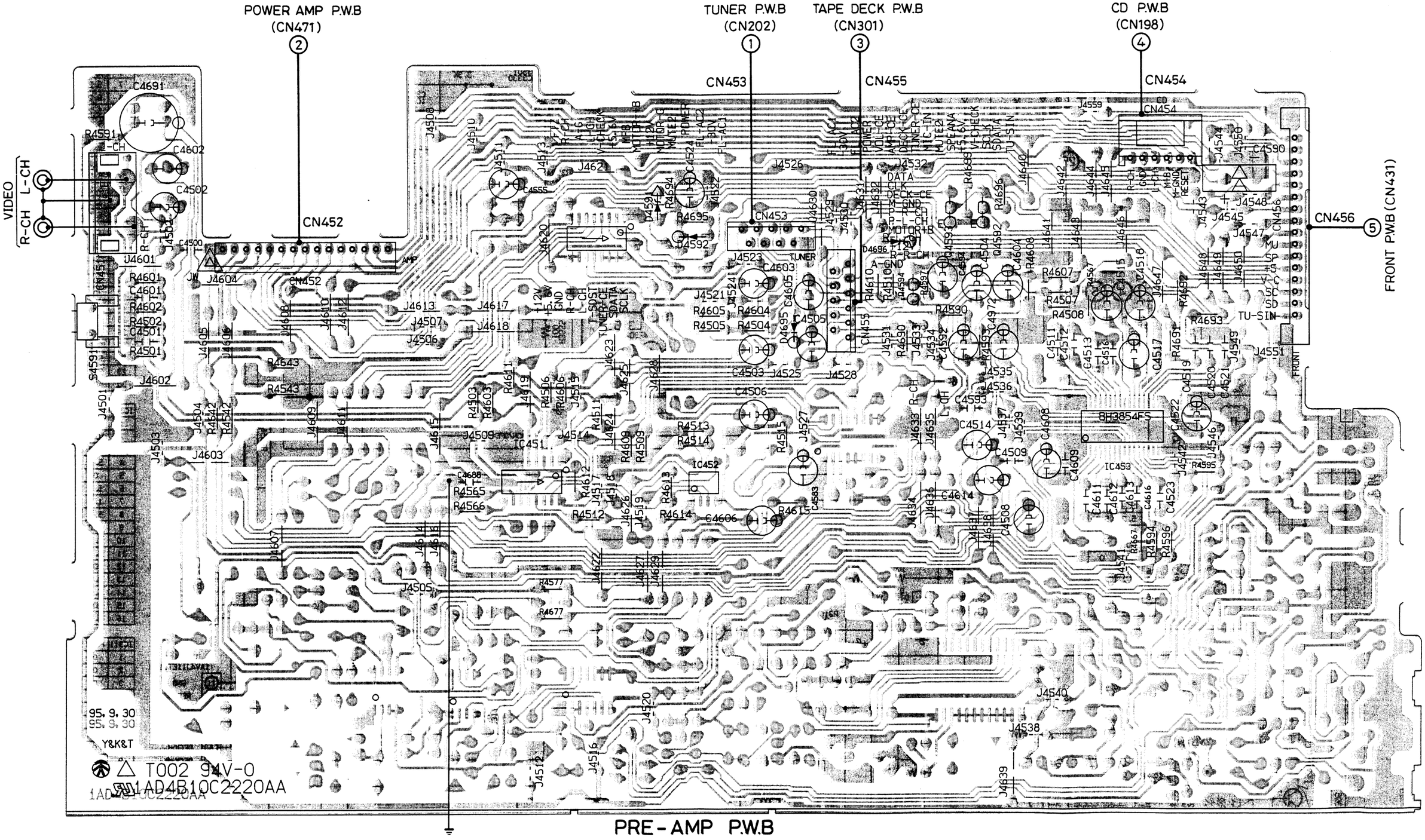
P.T
T0001

1AD4B10C2220E
T002 94V-0

POWER TRANSFORMER, SECONDARY P.W.B

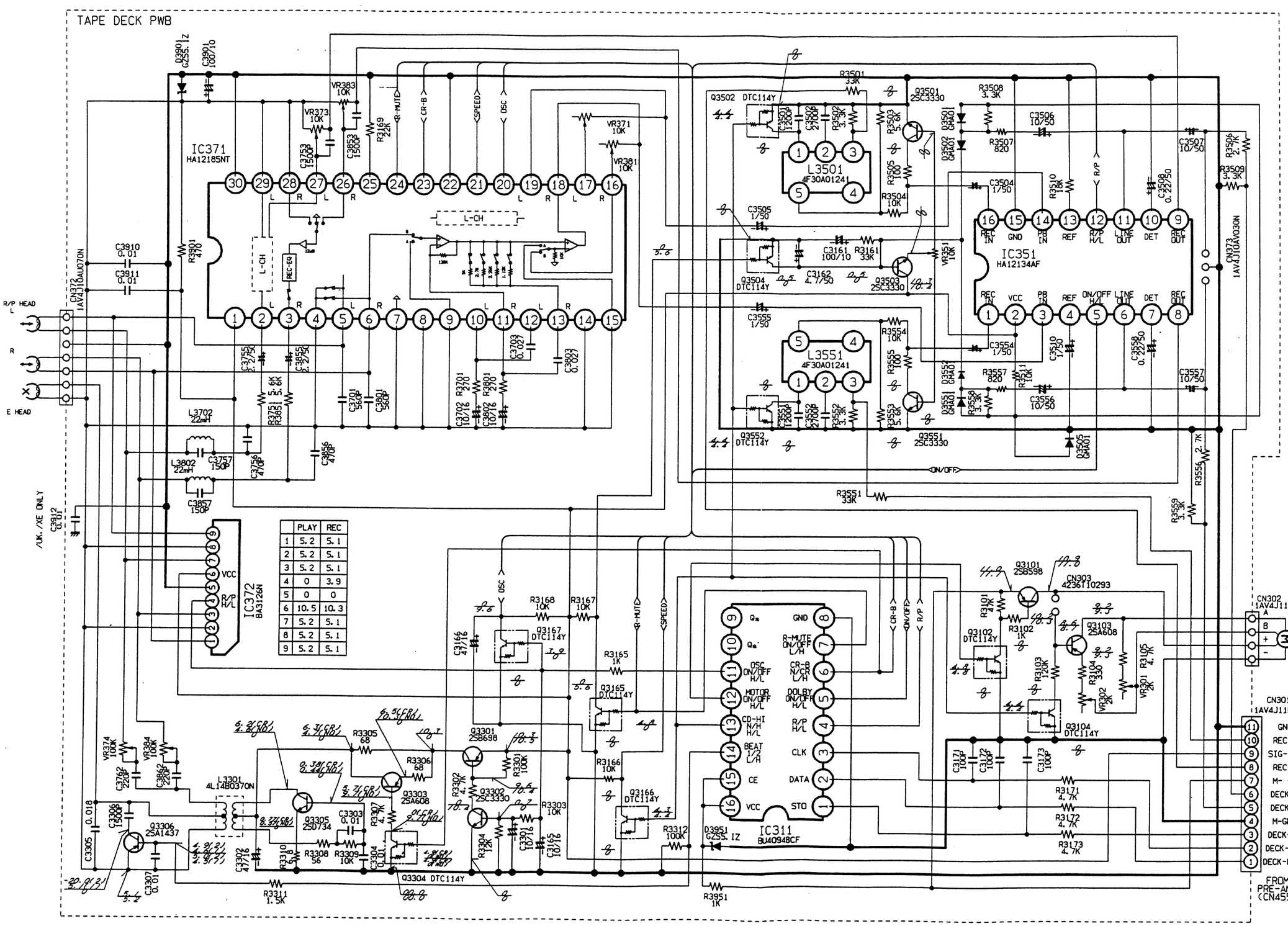
SCHEMATIC DIAGRAM (PRE-AMP.)




POWER AMP P.W.B
(CN471)
TUNER P.W.B
(CN202)
TAPE DECK P.W.B
(CN301)
CD P.W.B
(CN198)
CN452
CN453
CN455
CN454
CN456
FRONT P.W.B (CN431)
VIDEO
R-CH L-CH
95. 9. 30
Y&K&T
T002 94V-0
1AD4B10C2220AA

PRE-AMP P.W.B

SCHEMATIC DIAGRAM (TAPE DECK)

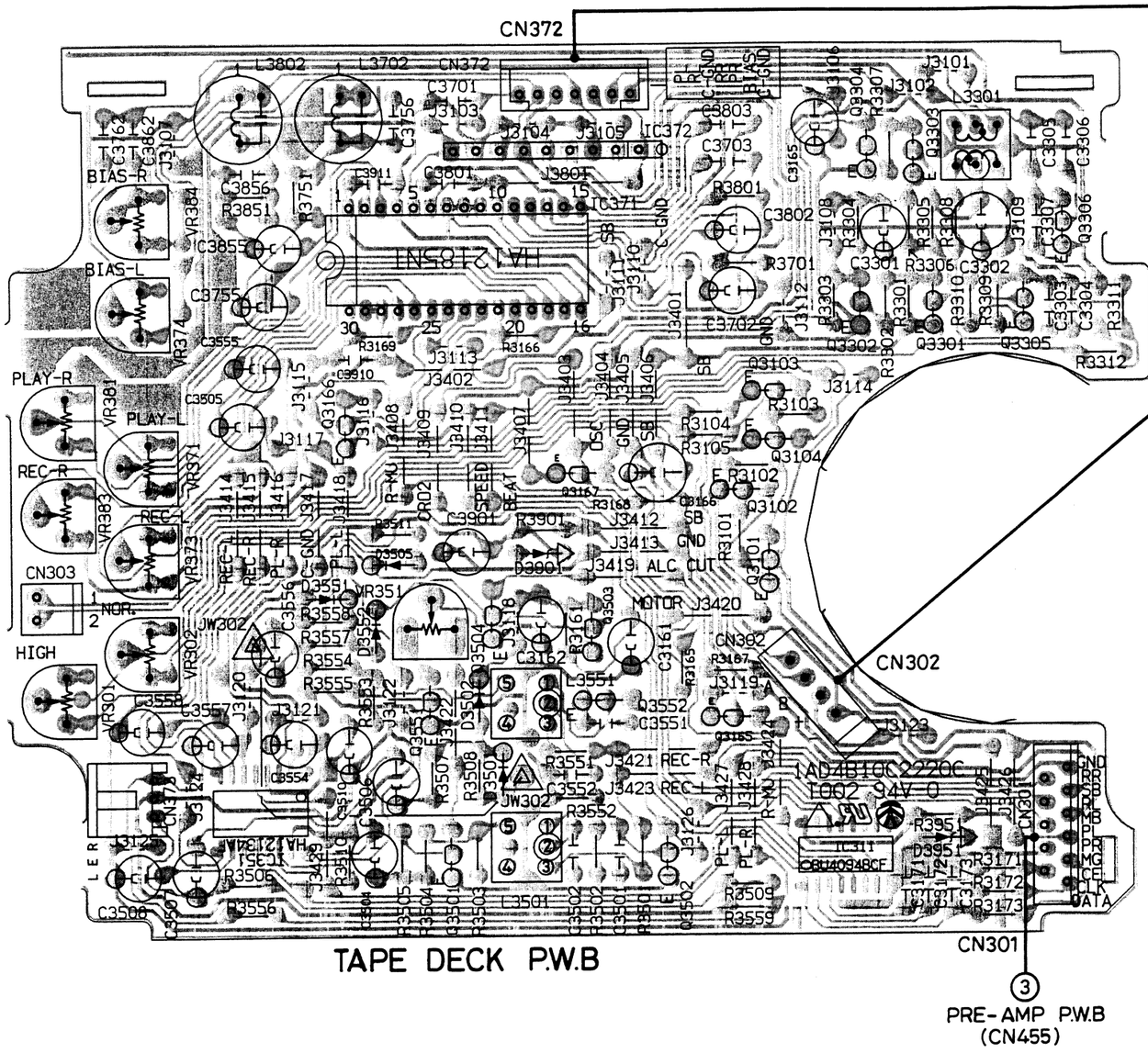


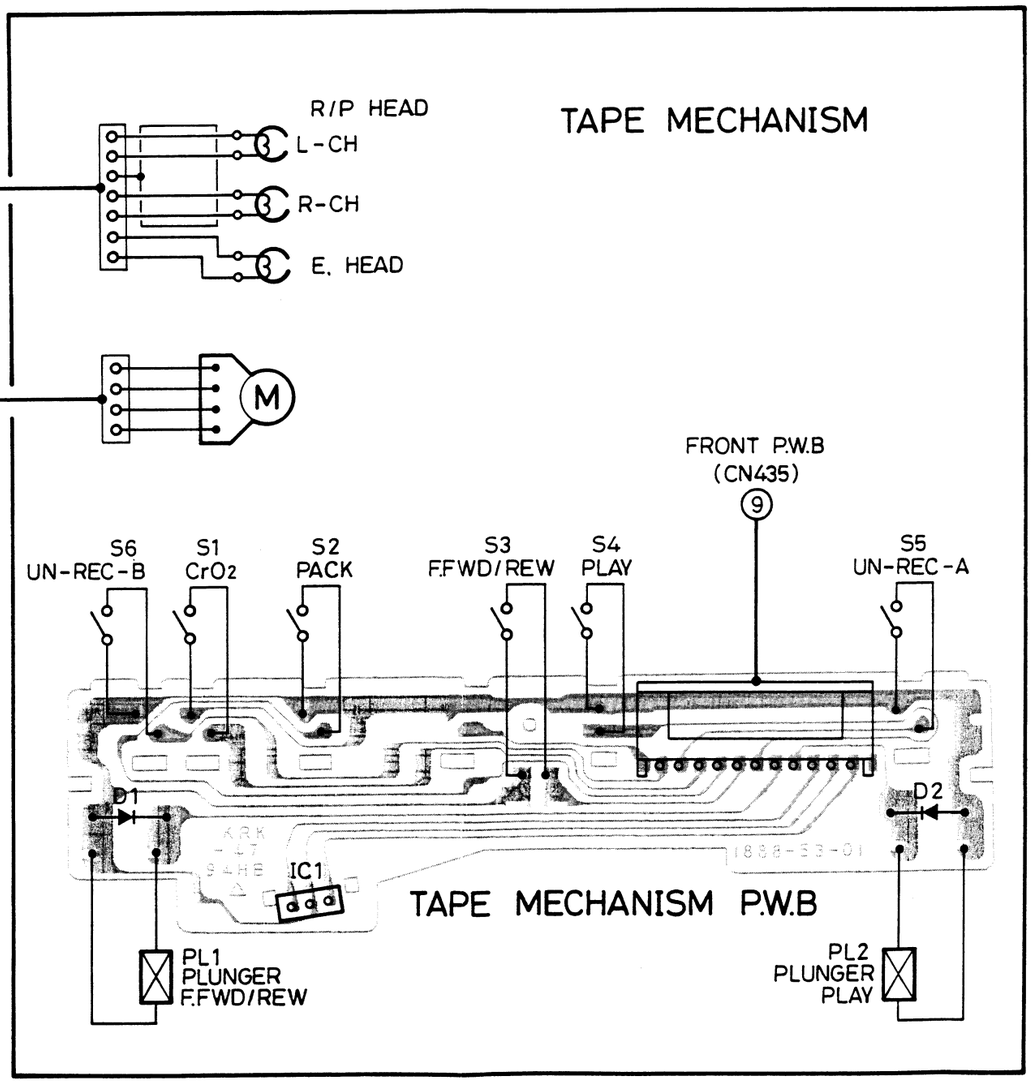
	PLAY	REC
1	5.2	5.1
2	5.2	5.1
3	5.2	5.1
4	0	3.9
5	0	0
6	10.5	10.3
7	5.2	5.1
8	5.2	5.1
9	5.2	5.1

IC371	PLAY	REC	OTHER
1	10.5	10.3	
2	3.4	5.1	
3	3.4	5.1	
4	5.2	5.1	
5	5.2	5.1	
6	5.2	5.1	
7	5.2	5.1	
8	5.2	5.1	
9	5.2	5.1	
10	5.2	5.1	
11	5.2	5.1	
12	5.1	5.1	
13	5.1	5.1	
14	5.2	5.1	
15	5.2	5.1	
16	5.1	2.4	
17	5.1	2.4	
18	5.1	1.3	
19	5.1	1.3	
20	9.7	0	
21	0	0	9.5(HI DUB)
22	0	0	
23	0	0	4.9(CrO2)
24	0	4.8	
25	1.2	1.2	
26	5.2	5.1	
27	5.2	5.1	
28	5.2	5.1	
29	5.2	5.1	
30	0	0	

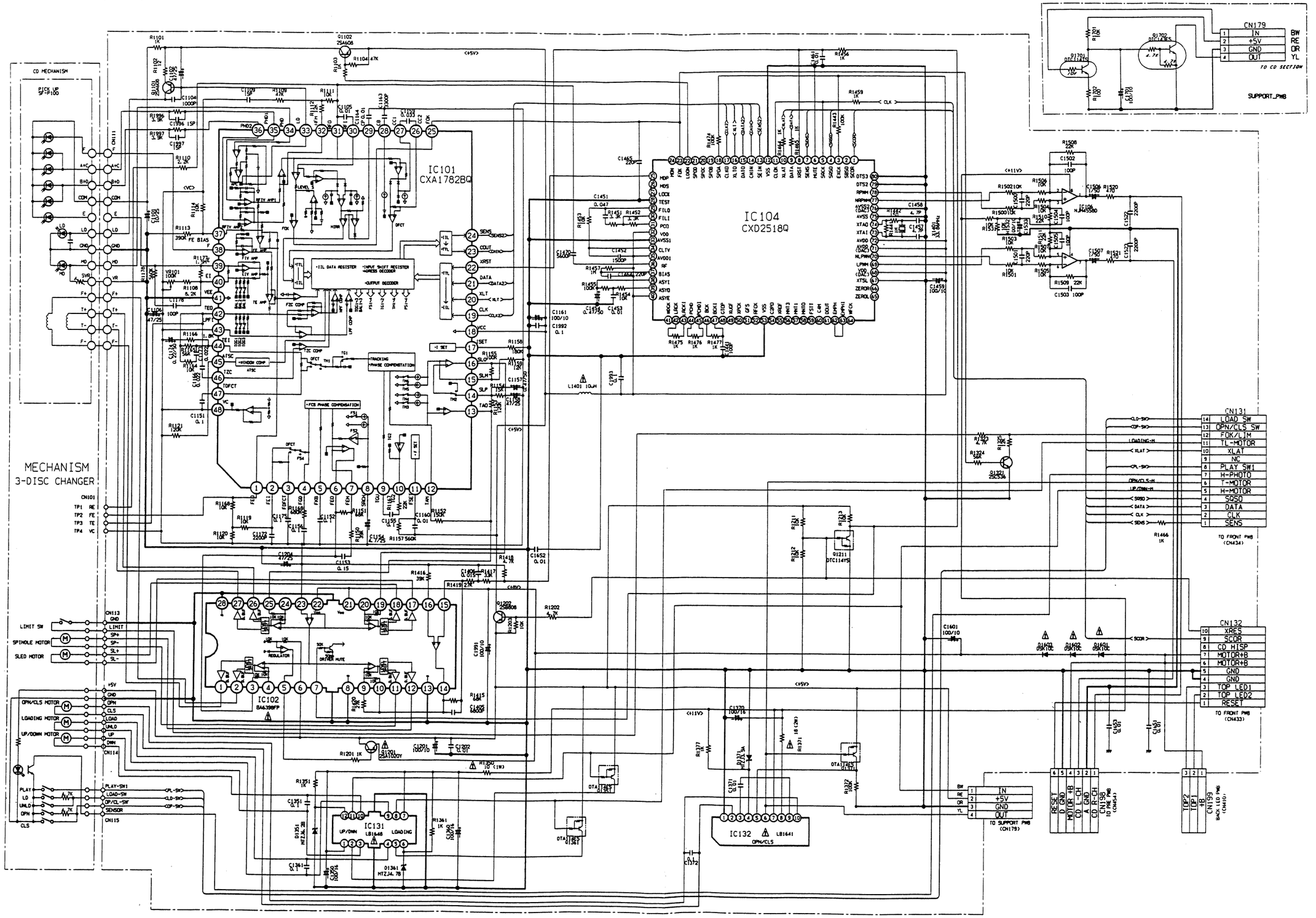
IC351	PLAY	REC	OTHER
1	5.2	5.1	
2	10.5	10.3	
3	5.2	5.1	
4	5.0	4.9	
5	0	0	5.0(DOL ON)
6	5.1	5.0	
7	1.3	1.3	
8	5.2	5.1	
9	5.2	5.1	
10	1.3	1.3	
11	5.1	5.0	
12	0	4.9	
13	0.9	0.9	
14	5.2	5.1	
15	0	0	
16	5.2	5.1	

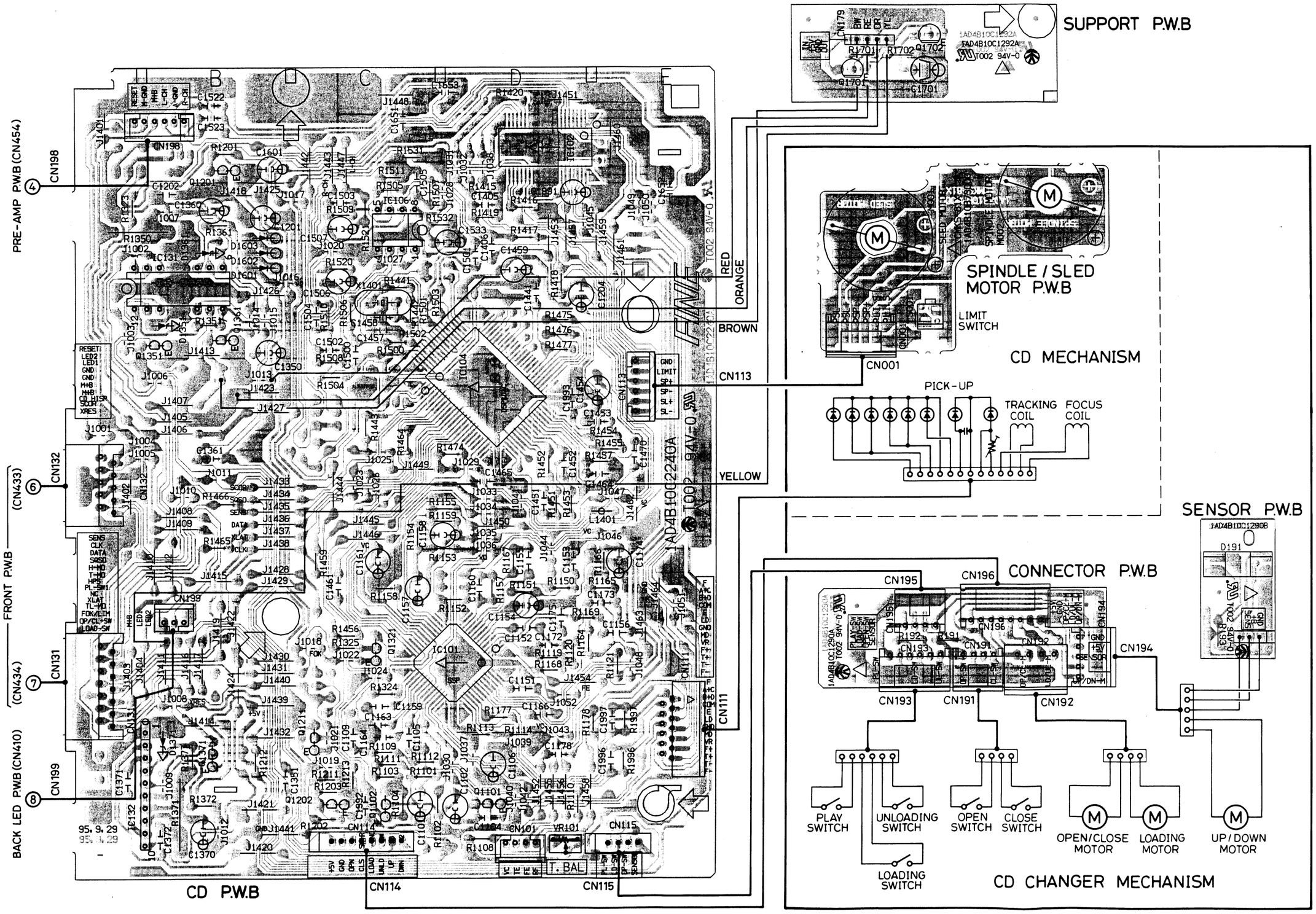
IC311	PLAY	REC	OTHER
1	0	0	
2	0	0	
3	0	0	
4	0	4.9	
5	0	0	5.0(DOL ON)
6	0	0	4.9(CrO2)
7	0	4.8	
8	0	0	
9	0	0	
10	0	0	
11	0	4.7	
12	4.9	4.7	
13	4.5	4.3	0(HI DUB)
14	0	0	4.9(BEAT2)
15	5.1	5.0	
16	5.1	5.0	


CN372
CN303
CN302
CN301
HIGH
NOR.
BIAS-R
BIAS-L
PLAY-R
PLAY-L
REC-R
REC-L
TAPE DECK P.W.B
PRE-AMP P.W.B
(CN455)

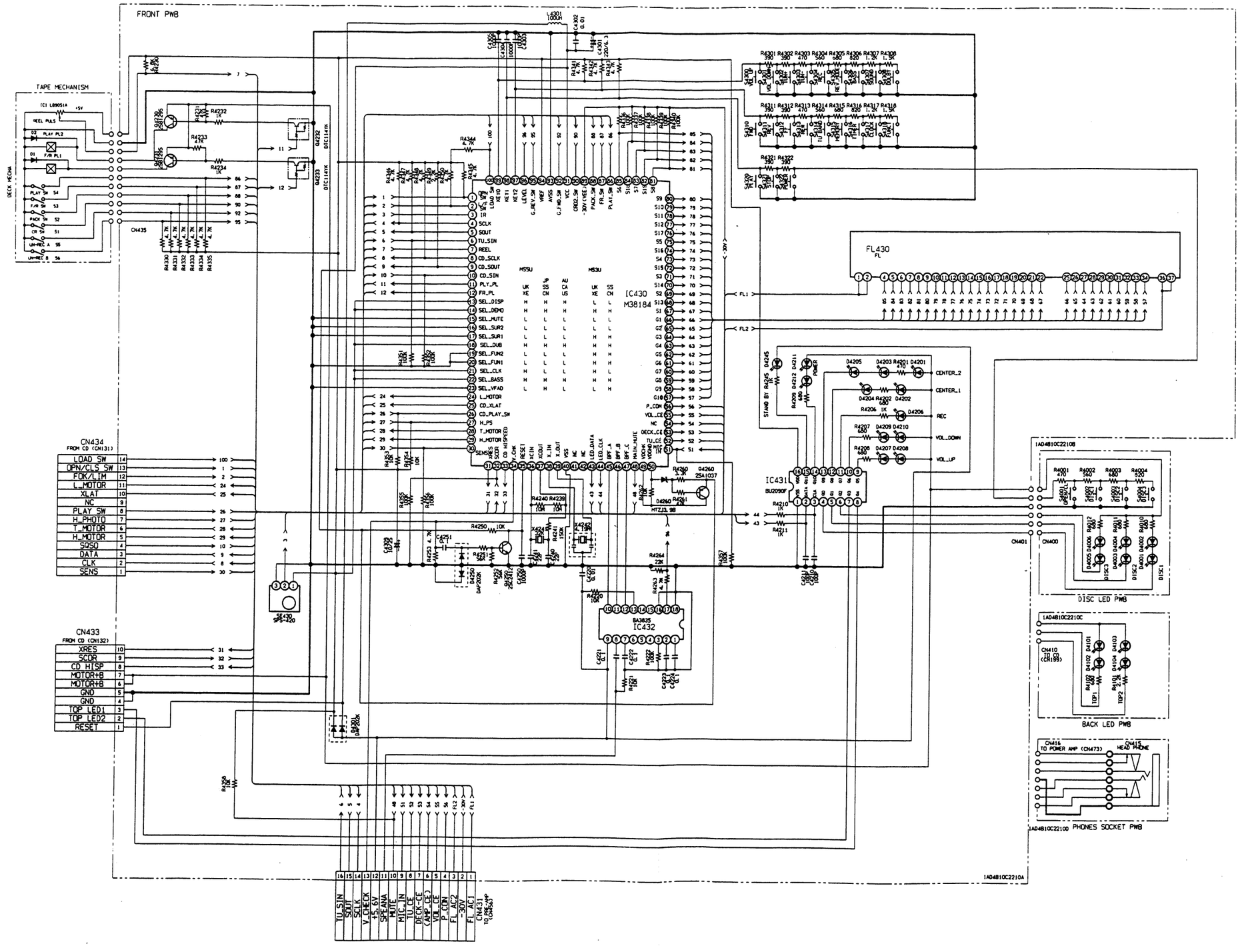

TAPE MECHANISM
R/P HEAD
L-CH
R-CH
E. HEAD
M
FRONT P.W.B
(CN435)
9
S6
UN-REC-B
S1
CrO2
S2
PACK
S3
F.FWD/REW
S4
PLAY
S5
UN-REC-A
D1
D2
IC1
TAPE MECHANISM P.W.B
PL1
PLUNGER
F.FWD/REW
PL2
PLUNGER
PLAY

SCHEMATIC DIAGRAM (CD)

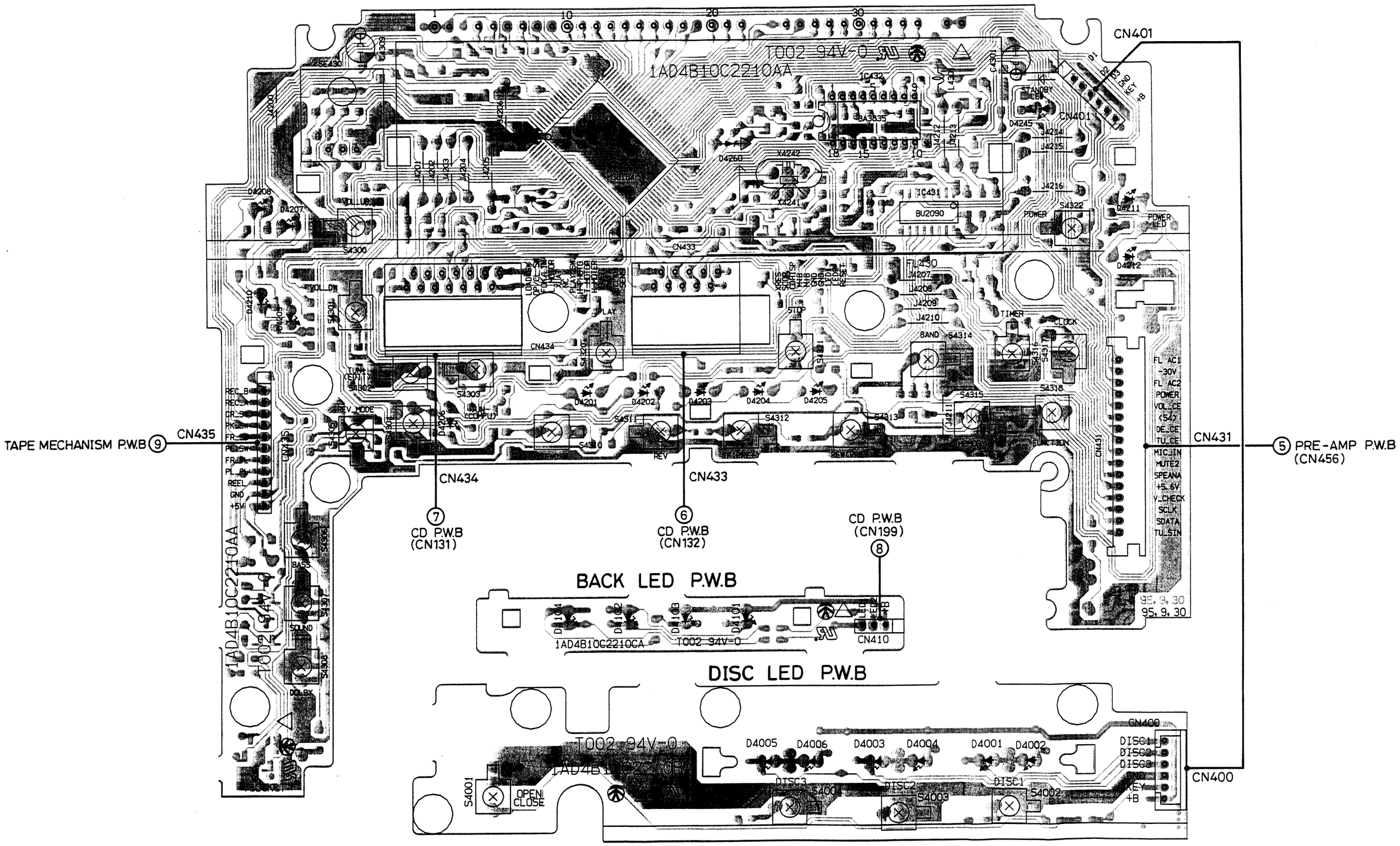



SUPPORT P.W.B
CN179
R1701
R1702
Q1702
Q1701
Q1703
SPINDLE / SLED
MOTOR P.W.B
LIMIT
SWITCH
CN001
CD MECHANISM
PICK-UP
TRACKING COIL
FOCUS COIL
SENSOR P.W.B
D191
CONNECTOR P.W.B
CN195
CN196
CN194
CN193
CN191
CN192
PLAY SWITCH
UNLOADING SWITCH
LOADING SWITCH
OPEN SWITCH
CLOSE SWITCH
OPEN/CLOSE MOTOR
LOADING MOTOR
UP/DOWN MOTOR
CD CHANGER MECHANISM
RED
ORANGE
BROWN
YELLOW
CN113
CN111
CN114
CN115
PRE-AMP P.W.B (CN454)
CN198
FRONT P.W.B (CN433)
CN132
CN131
(CN434)
BACK LED P.W.B (CN410)
CN199
CD P.W.B
T. BAL

SCHEMATIC DIAGRAM (FRONT)



FRONT P.W.B


CN401
T002 94V-0
1AD4B10C2210AA
IC432
BA3835
STANDBY LED
D4245
IC431
BU2090
POWER
S4322
D4211
POWER LED
D4212
FL4130
TIMER
CLOCK
BAND
S4314
S4316
S4317
S4318
S4315
S4313
S4312
S4311
S4310
S4309
S4308
S4307
S4306
S4305
S4303
S4302
S4300
S4320
CN433
CN434
CN435
CN431
CN400
D4201
D4202
D4203
D4204
D4205
D4206
D4207
D4208
D4210
D4260
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X4241
J4201
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J4208
J4209
J4210
J4211
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J4213
J4214
J4215
J4216
SE430
C4308
C4309
C4310
C4311
C4312
C4313
C4314
C4315
C4316
C4317
C4318
C4319
C4320
C4321
C4322
C4323
C4324
C4325
C4326
C4327
C4328
C4329
C4330
C4331
C4332
C4333
C4334
C4335
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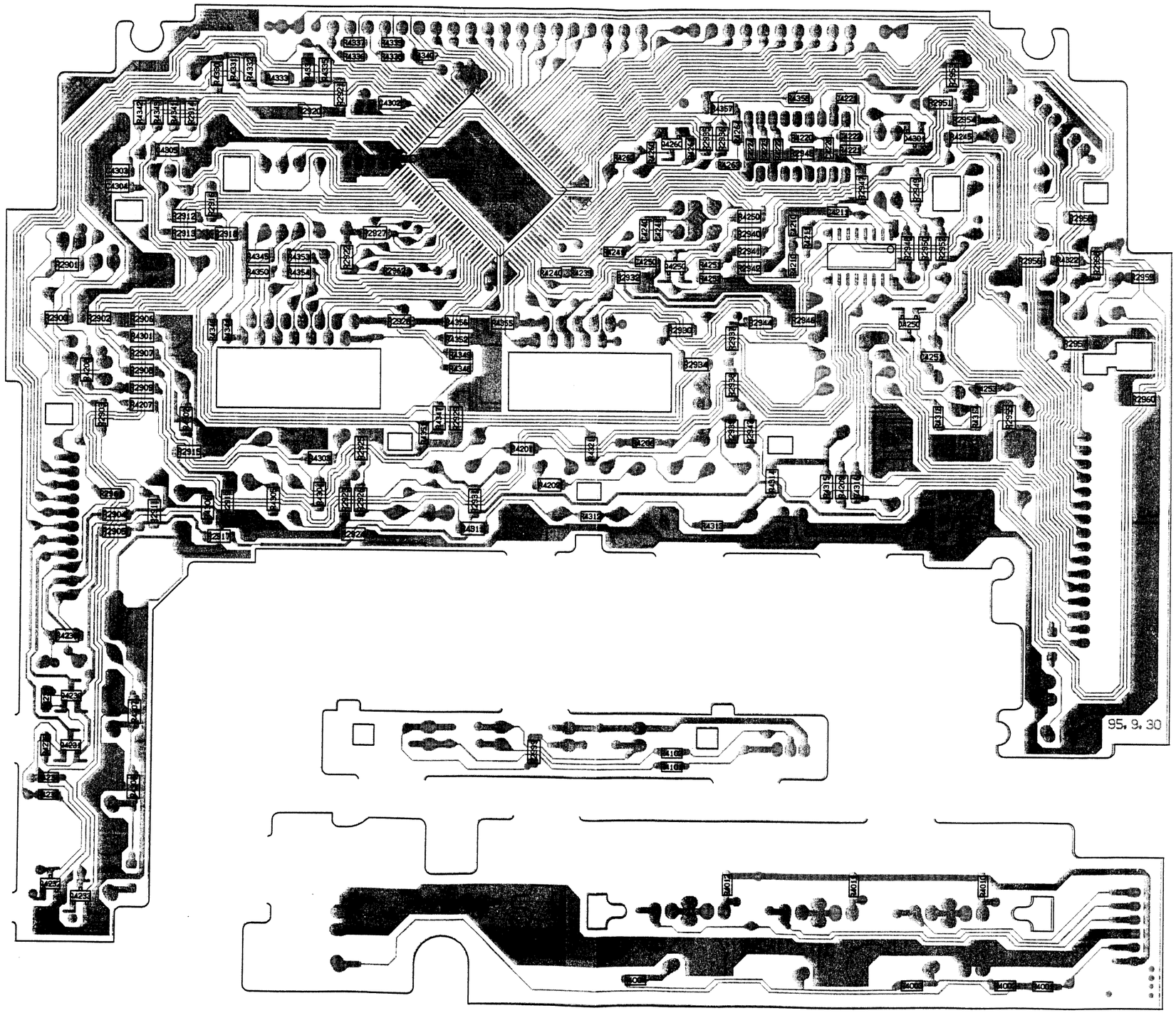
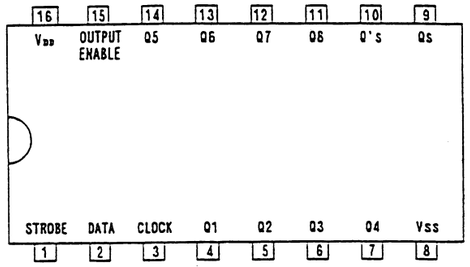
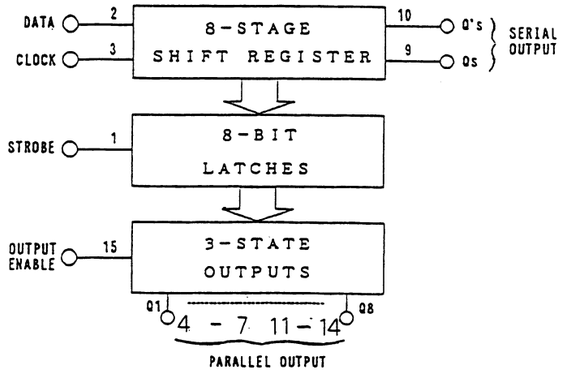
C4347


95. 9. 30

IC BLOCK DIAGRAM & DESCRIPTION

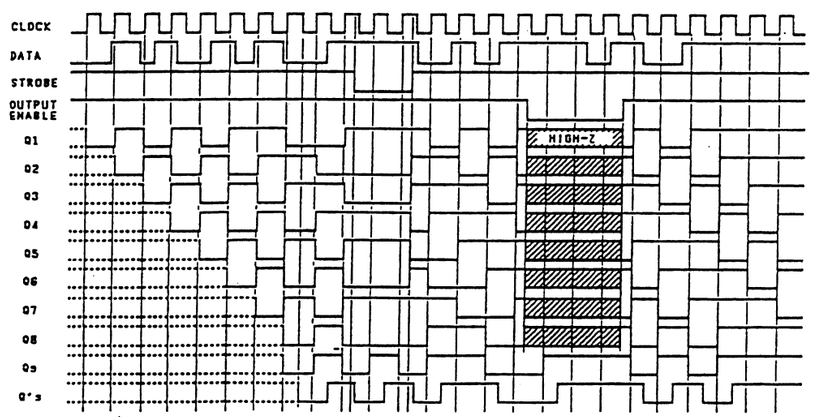
IC311 BU4094B (8-STAGE SHIFT/STORE REGISTER)





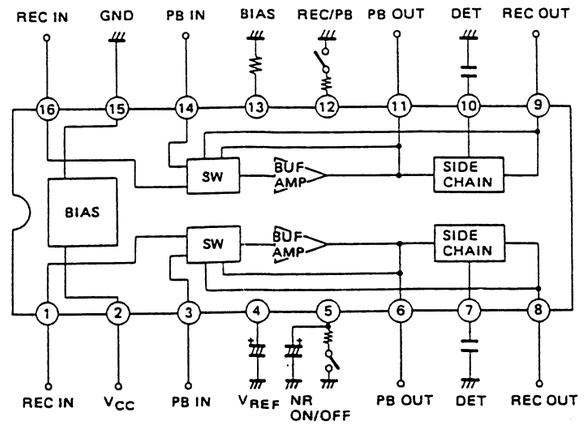
CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
⎍	L	×	×	Z	Z	Q7	No Chg.
⎌	L	×	×	Z	Z	No Chg.	Qs
⎍	H	L	×	No Chg.	No Chg.	Q7	No Chg.
⎍	H	H	L	L	Qn−1	Q7	No Chg.
⎍	H	H	H	H	Qn−1	Q7	No Chg.
⎌	H	×	×	No Chg.	No Chg.	No Chg.	Qs

Z=High Impedance
×=Don't Care

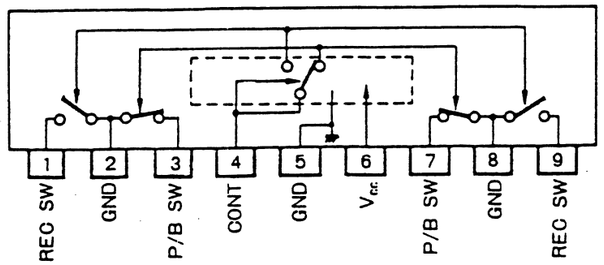


IC BLOCK DIAGRAM & DESCRIPTION

IC351 HA12134A (DOLBY B-TYPE NOISE REDUCTION)



IC372 BA3126N (HEAD CHANGEOVER SWITCHES)

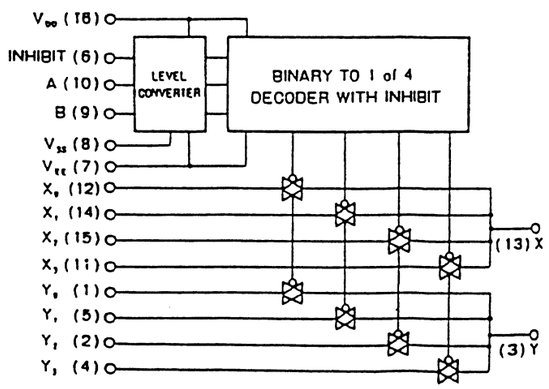


IC440 MC14052BF (FUNCTION)

Truth Table

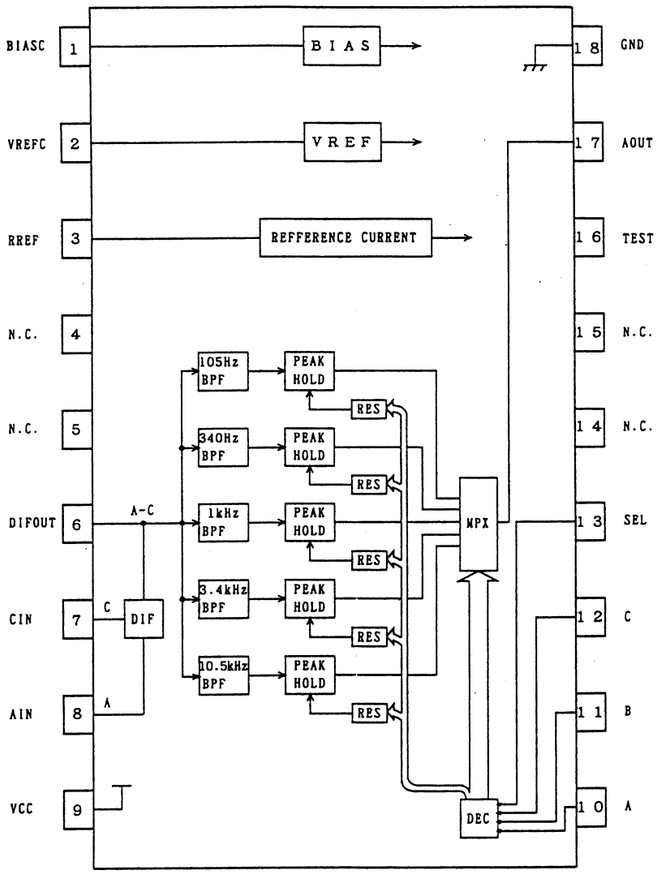
INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	X	X	NONE

X : Don't Care



IC BLOCK DIAGRAM & DESCRIPTION

IC432 BA3835S (AUDIO SPECTRUM ANALYZER BAND BASS FILTER)

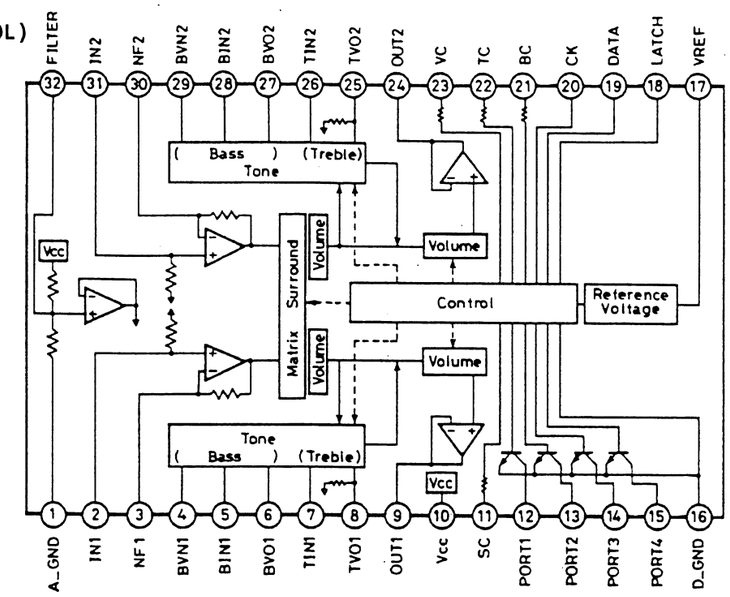


SEL	A	B	C	AOUT
0	×	×	×	GND
1	0	0	0	GND
1	0	0	1	105Hz
1	0	1	0	340Hz
1	0	1	1	GND
1	1	0	0	1kHz
1	1	0	1	GND
1	1	1	0	3.4kHz
1	1	1	1	10.5kHz

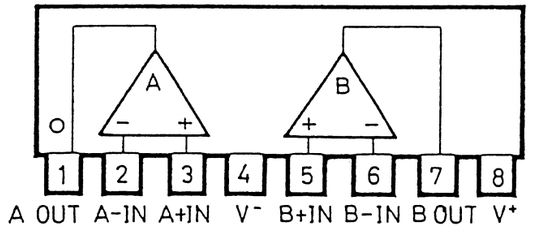
* ×は、 Don't Care。

IC BLOCK DIAGRAM & DESCRIPTION

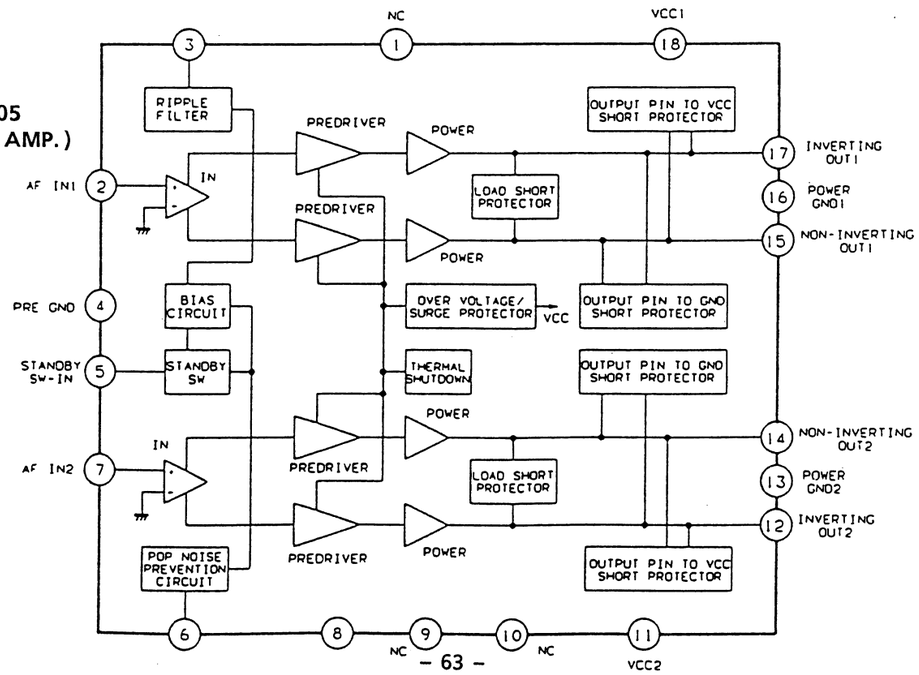
IC453 BH3854FS
(AUDIO SOUND CONTROL)



IC472, NJM4558L (OP. AMP.)
IC473



IC471 LA4705
(AF POWER AMP.)



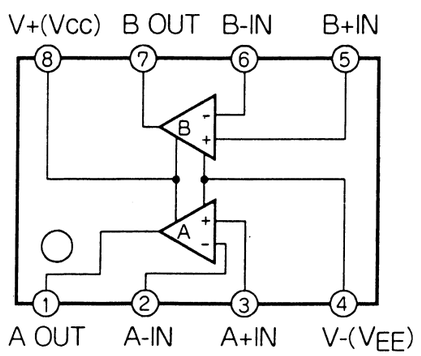
IC BLOCK DIAGRAM & DESCRIPTION

IC101 CXA1782BQ (SERVO SIGNAL PROCESSOR)

No.	Name	I / O	Description
1	FEO	O	Focus error amplifier output.
2	FEI	I	Focus error input.
3	FDFCT	I	Capacitor connection pin for detect time constant.
4	FGD	I	Ground this pin through a capacitor when decreasing the focus servo high-frequency
5	FLB	I	External time constant setting pin for increasing the focus servo low frequency.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier negative input.
8	SRCH	I	External time constant setting pin for generating focus servo waveform.
9 10	TGU TG2	I I	External time constant setting pin for switching tracking high-frequency gain.
11	FSET	I	High cut off frequency setting pin for focus and tracking phase compensation amplifier.
12	TAM	I	Tracking amplifier negative input.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input.
15	SLM	I	Sled amplifier negative input.
16	SLO	O	Sled drive output
17	ISET	I	Setting pin for Focus search, Tracking jump, and Sled kick current.
18	V_{CC}	-	+5.0V
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU.
22	XRST	I	Reset input; resets at Low.
23	C.OUT	O	Track number count signal output.
24	SENS	O	Outputs FZC, DFCT, TZC, gain, balance, and others according to the command from CPU.

No.	Name	I / O	Description
25	FOK	O	Focus OK comparator output.
26	CC2	O	Input pin for the DEFECT bottom hold output capacitance-coupled.
27	CC1	I	DEFECT bottom hold output.
28	CB	I	Connection pin for DEFECT bottom hold capacitor.
29	CP	I	Connection pin for MIRR hold capacitor. MIRR comparator non-inversed input.
30	RFI	I	Input pin for the RF summing amplifier output capacitance-coupled.
31	RFO	O	RF summing amplifier output. Eye pattern check point.
32	RFM	I	RF summing amplifier inverted input. The RF amplifier gain is determined by the resistance connected between this pin and RFO pin.
33	LD	O	APC (Auto Power Control) amplifier output.
34	PHD	I	APC (Auto Power Control) amplifier input.
35 36	PHD1 PHD2	I I	RF I-V amplifier inverted input.
37	FEBIAS	I	Bias adjustment of focus error amplifier.
38 39	F E	I I	F I-V and E I-V amplifier inverted input.
40	EI	-	I-V amplifier E gain adjustment.
41	V_{EE}	-	GND
42	TEO	O	Tracking error amplifier output.
43	LPFI	I	Comparator input for balance adjustment.
44	TEI	I	Tracking error input.
45	ATSC	I	Window comparator input for ATSC detection.
46	TZC	I	Tracking zero-cross comparator input.
48	VC	O	$(V_{CC}+V_{EE})$ / 2 DC voltage output.

IC106 NJM4558D or LA6458D (OP. AMP.)

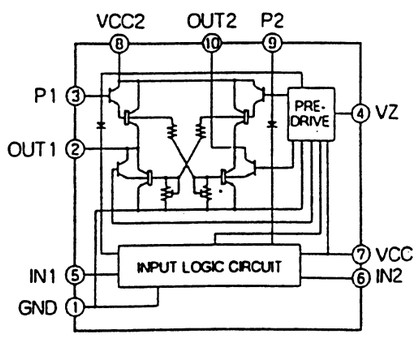


IC BLOCK DIAGRAM & DESCRIPTION

IC102 BA6398FP (POWER DRIVER)

No.	NAME	DESCRIPTION
1	CH1-OUT A	DRIVER CH1 (-)
2	CH1-OUT B	DRIVER CH1 (+)
3	CH1-IN A	DRIVER CH1
4	CH1-IN B	NOT USED
5	Tr-B	REGULATOR
6	Vreg OUT	Vreg
7	MUTE	MUTE CONTROL
8	GND	GND
9	CH2-IN B	DRIVER CH2 GAIN
10	CH2-IN A	DRIVER CH2
11	CH2-OUT B	DRIVER CH2 (+)
12	CH2-OUT A	DRIVER CH2 (-)
13	GND	GND
14	OP OUT	OP. AMP
15	OP IN (-)	OP. AMP
16	OP IN (+)	OP. AMP
17	CH3-OUT A	DRIVER CH3 (-)
18	CH3-OUT B	DRIVER CH3 (+)
19	CH3-IN A	DRIVER CH3
20	CH3-IN B	NOT USED
21	VCC	VCC
22	VCC	VCC
23	BIAS IN	BIAS
24	CH4-IN B	NOT USED
25	CH4-IN A	DRIVER CH4
26	CH4-OUT B	DRIVER CH4 (+)
27	CH4-OUT A	DRIVER CH4 (-)
28	GND	GND

IC132 LB1641 (RECORD/PLAY SWITCHING)



Input		Output		Action
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	Normal(Reverse)Rotary
0	1	0	1	Reverse(Normal)Rotary
1	1	0	0	Brake

IC BLOCK DIAGRAM & DESCRIPTION

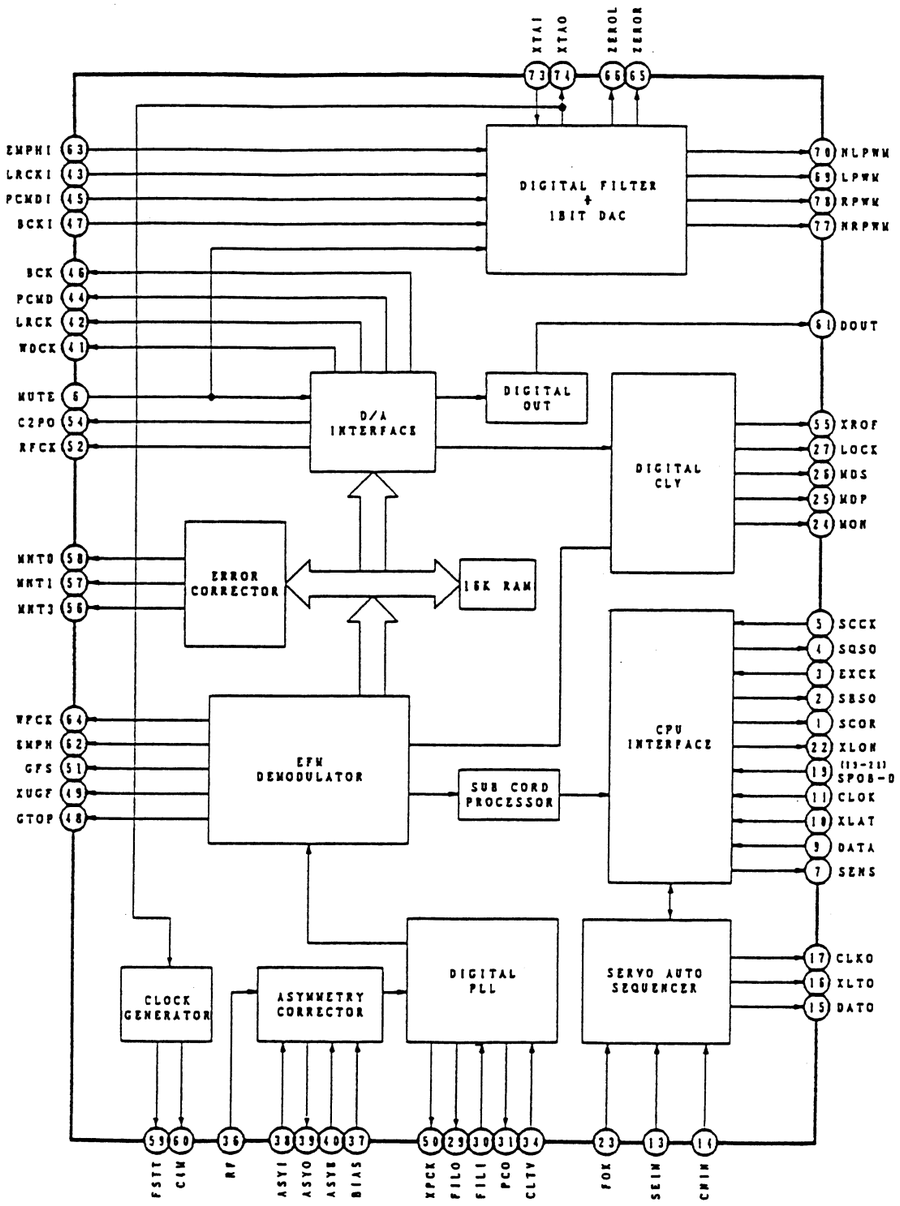
IC104 CXD2518Q (DIGITAL SIGNAL PROCESSOR)

No.	Name	I / O	Description
1	SCOR	O	Turns "H" when sync S0 or S1 is detected.
2	SBSO	O	Serial output of sub-code P ~ W.
3	EXCK	I	Clock input for reading SBSO.
4	SQSO	O	Serial output of SUBQ & SOBIT.
5	SQCK	I	Clock input for reading SQSO.
6	MUTE	I	"H" at muting, "L" at muting cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset, "L" at resetting.
9	DATA	I	Inputs serial data from CPU.
10	XLAT	I	Latches input from CPU. Serial data latches at falling edge.
11	CLOK	I	Inputs serial data transfer clock from CPU.
12	V_{SS}	-	GND.
13	SEIN	I	Inputs SENS signal from SSP.
14	CNIN	I	Inputs track jump count signal
15	DATO	O	Outputs serial data to SSP
16	XLTO	O	Outputs latches to SSP. Serial data latches at falling edge.
17	CLKO	O	Outputs serial data transfer clock to SSP.
18	TEST2	I	Pin for TEST. Normal used state: V_{DD}.
19	SPOB	I	Not used
20	SPOC	I	Not used
21	SPOD	I	Not used
22	XLON	O	Interface for extension of M. processor(output)
23	FOK	I	Focus OK signal input pin. Used servo auto sequencer with SENS output.
24	MON	O	ON/OFF control signal for spindle motor.
25	MDP	O	Servo control signal for spindle motor.
26	MDS	O	Not used
27	LOCK	O	Not used
28	TEST	I	GND.
29	FILO	O	Output of filter for master PLL.(Slave = Digital PLL)
30	FILI	I	Inputs to filter for master PLL.
31	PCO	O	Outputs of charge pump for master PLL.
32	V_{DD}	-	Power supply for digital.(+ 5V)
33	AV_{SS1}	-	Power supply for analog.(0V)
34	CLTV	I	VCO control voltage input for master PLL.
35	AV_{DD1}	-	Power supply for analog.(+ 5V)
36	RF	I	EFM signal input.
37	BIAS	I	Inputs constant current for asymmetry correction circuit.
38	ASYI	I	Inputs comparator voltage for asymmetry correction circuit.
39	ASYO	O	EFM fill swing output.("L" = V_{SS}, "H" = V_{DD})
40	ASYE	I	"L" : OFF of asymmetry correction. "H" : ON of asymmetry correction.

No.	Name	I / O	Description
41	WDCK	O	Not used
42	LRCK	O	D/A interface for 48-bit slot. LR clock (f = FS)
43	LRCKI	I	Inputs LR clock to DAC.(48-bit slot)
44	PCMD	O	D/A interface. Serial data(2'SCOMP,MBS first)
45	PCMDI	I	Inputs audio data to DAC.(48-bit slot)
46	BCK	O	D/A interface. Bit clock.
47	BCKI	I	Inputs bit clock to DAC.(48-bit slot)
48	GTOP	O	Not used
49	XUGF	O	Not used
50	XPCK	O	Not used
51	GFS	O	Not used
52	RFCK	O	Not used
53	V_{SS}	-	GND.
54	C2PO	O	Not used
55	XROF	O	Not used
56	MNT3	O	Not used
57	MNT1	O	Not used
58	MNT0	O	Not used
59	FSTT	O	Not used
60	C4M	O	Not used
61	DOUT	O	Not used
62	EMPH	O	Stays "H" for playback disc provided with emphasis or "L" for that without emphasis.
63	EMPHI	I	De-emphasis ON/OFF of DAC. "H" at ON, "L" at OFF.
64	WFCK	O	Not used
65	ZEROL	O	Outputs detection for non-sound data. "H" at detection for non-sound data (L-ch)
66	ZEROR	O	Outputs detection for non-sound data. "H" at detection for non-sound data (R-ch)
67	DTS1	I	Normal used state: "L".
68	V_{DD}	-	Power supply for DAC.
69	LPWM	O	Outputs PWM for L-ch. (Positive Phase)
70	NLPWM	O	Outputs PWM for L-ch. (Negative Phase)
71	AV_{DD2}	-	Power supply for L-ch PWM driver.
72	AV_{DD3}	-	Power supply for X'tal.
73	XTAI	I	Inputs X'tal oscillation circuit (33.8688MHz).
74	XTAO	I	Outputs X'tal oscillation circuit (33.8688MHz).
75	AV_{SS3}	-	GND.
76	AV_{SS2}	-	GND.
77	NRPWM	O	Outputs PWM for R-ch. (Negative Phase)
78	RPWM	O	Outputs PWM for R-ch. (Positive Phase)
79	DTS2	I	Normal used state: "L".
80	DTS3	I	Normal used state: "L".

IC BLOCK DIAGRAM & DESCRIPTION

IC104 CXD2518Q (DIGITAL SIGNAL PROCESSOR)



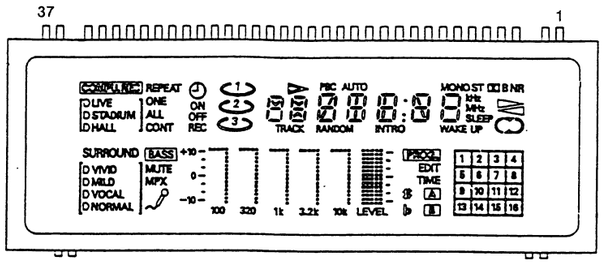
IC BLOCK DIAGRAM & DESCRIPTION

IC430 M38184MA-215FP (MICROPROCESSOR)

No.	PIN NAME	I/O	DESCRIPTION	POWER (OFF)
1	CD-SW1	I	CD OPEN SWITCH, CLOSE SWITCH	
2	CD-SW0	I	CD LIMIT SWITCH, FOK	
3	IR	I	REMOTE CONTROL	
4	SCLK	O	SIREAL CLOCK	L
5	SOUT	O	SIREAL DATA	L
6	TUN-SIN	I	TUNER IC245, DO	
7	REEL	I	TAPE DACK REEL PULSE	
8	CD-SCLK	O	CD IC104 CLK / SQCK	L
9	CD-SOUT	O	CD IC104 DATA	L
10	CD-SIN	I	CD IC104 SQSO	
11	PLY-PL	O	TAPE DECK PLAY PLUNGER (L = OFF, H = ON)	L
12	FR-PL	O	TAPE DECK FF/REW PLUNGER (L = OFF,H = ON)	L
13	SEL-DISP		SELECTION DISPLAY (L = SQUARE, H = PEAK HOLD)	
14	SEL-DEMO		SELECTION DEMO (L = RESET DEMO START,H = NO START)	
15	SEL-MUTE		SELECTION MUTE (L = OFF, H = ON)	
16	SEL-SUR2		SELECTION SURROUND (L = OFF/ON, H = OFF~HALL)	
17	SEL-SUR1		SELECTION SURROUND (L = OFF, H = ON)	
18	SEL-DUB		SELECTION DUBBING (L = NORMAL, H = HIGH)	
19	SEL-FUNC2		SELECTION FUNCTION	
20	SEL-FUNC1		SELECTION FUNCTION (L = VIDEO, H = PHONO, L = VD-PH, H = NO)	
21	SEL-CLOCK		SELECTION CLOCK (L = 12H, H = 24H)	
22	SEL-BASS		SELECTION BASS (L = OFF~3, H = OFF/ON)	
23	SEL-VFAD		SELECTION VOCAL FADER (L = OFF, H = ON)	
24	L-MOTOR	O	CD TRAY LOADING MOTOR (L = UNLOAD,M = STOP,H = LOAD)	M
25	CD-XLAT	O	CD DSP LATCH	L
26	PLAY-SW	I	CD PLAY SWITCH	
27	H-PS	I	CD HOLDER PHOTO SENSOR	
28	T-MOTOR	O	CD TRAY OPEN/CLOSE MOTOR (L = CLOSE, M = STOP, H = OPEN)	M
29	H-MOTOR	O	CD HOLDER MOTOR (L = DOWN, M = STOP, H = UP)	M
30	CD-SENS	I	CD SENS	
31	CD-XRES		CD POWER CONTROL SIGNAL (H = POWER OFF, M = DSP RESET, L = POWER ON)	L
32	CD-SCOR	I	CD SCOR INDICATE	
33	CD-HIEQ	O	CD HIGH SPEED EQUALIZER (L = HIGH, H = NORMAL)	L
34	V-CHK		VOLTAGE CHECK, FAILURE	
35	RESET		SYSTEM RESET	
36	XCIN		SUB CLOCK, X'tal	
37	XCOUT		SUB CLOCK, X'tal	
38	XIN		MAIN CLOCK, CERAMIC	
39	XOUT		MAIN CLOCK, CERAMIC	
40	VSS		GROUND	
41	NC			L
42	NC			L
43	LED-DATA	O	LED IC431 DATA	L
44	LED-CLK	O	LED IC431 CLOCK	L
45	BPF-A	O	IC432 A	L
46	BPF-B	O	IC432 B	L
47	BPF-C	O	IC432 C	L

No.	PIN NAME	I/O	DESCRIPTION	POWER (OFF)
48	MAIN MUTE	O	ANALOG AUDIO MUTE (L = OFF, H = ON)	L
49	VDCHK	I	VDD CHECK	
50	VDGND	O	VDD CHECK CURCUIT	H
51	MIC-IN	I	MIC (L = MIC OFF, H = MIC ON)	
52	TUN-CE	O	TUNER IC245 CE	L
53	DECK-CE	O	DECK IC311 CE	L
54	AMP-CE	O	NOT USED	
55	VOL-CE	O	IC453 LATCH	L
56	P-CON		POWER CONTROL (L = OFF, H = ON)	L
57	G10	O	FL DIGIT 10	
58	G9	O	FL DIGIT 9	
59	G8	O	FL DIGIT 8	
60	G7	O	FL DIGIT 7	
61	G6	O	FL DIGIT 6	
62	G5	O	FL DIGIT 5	
63	G4	O	FL DIGIT 4	
64	G3	O	FL DIGIT 3	
65	G2	O	FL DIGIT 2	
66	G1	O	FL DIGIT 1	
67	S1	O	FL SEGMENT 1	
68	S13	O	FL SEGMENT 13	
69	S2	O	FL SEGMENT 2	
70	S14	O	FL SEGMENT 14	
71	S3	O	FL SEGMENT 3	
72	S15	O	FL SEGMENT 15	
73	S4	O	FL SEGMENT 4	
74	S16	O	FL SEGMENT 16	
75	S5	O	FL SEGMENT 5	
76	S17	O	FL SEGMENT 17	
77	S12	O	FL SEGMENT 12	
78	S11	O	FL SEGMENT 11	
79	S10	O	FL SEGMENT 10	
80	S9	O	FL SEGMENT 9	
81	S8	O	FL SEGMENT 8	
82	S19	O	FL SEGMENT 19	
83	S7	O	FL SEGMENT 7	
84	S18	O	FL SEGMENT 18	
85	S6	O	FL SEGMENT 6	
86	PLAY-SW	I	TAPE DECK PLAY SWITCH	
87	FR-SW	I	TAPE DECK FF / REW SWITCH	
88	PACK-SW	I	TAPE DECK PACK SWITCH	
89	VEE		-30V, FL POWER, VEE	
90	CRO2-SW	I	TAPE SELECT SWITCH, CRO2	
91	VCC		VCC	
92	G-FWD-SW	I	TAPE DECK, FORWARD,UN-RECORDING SWITCH	
93	AVSS		A/D GROUND	
94	VREF		A/D REFERENCE VOLTAGE, VREF	
95	G-REV-SW	I	TAPE DECK, REVERSE, UN-RECORDING SWITCH	
96	LEVEL	I	LEVEL	
97	KEY2	I	KEY INPUT	
98	KEY1	I	KEY INPUT	
99	KEY0	I	KEY INPUT	
100	CD-SW2	I	CD LOAD SWITCH, UNLOAD SWITCH	

LCD DESCRIPTION



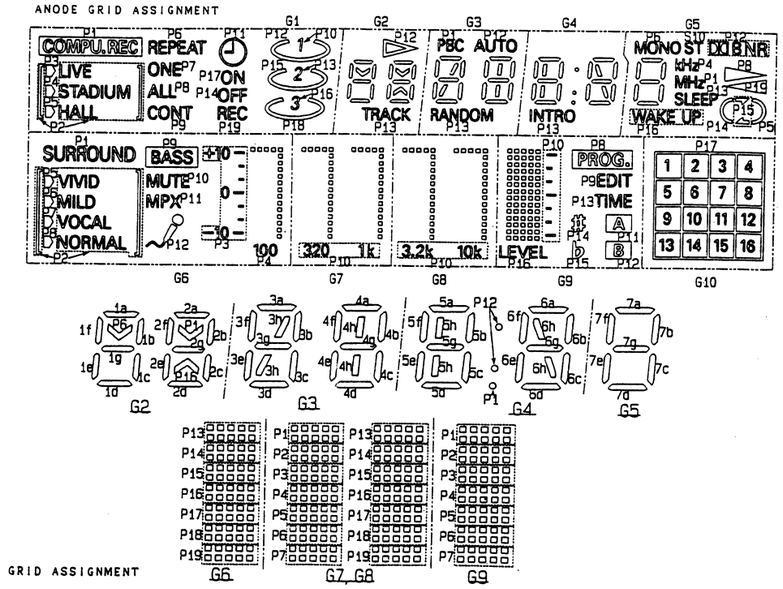
PIN ASSIGMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Assignment	F	F	NP	S6	S18	S7	S19	S8	S9	S10	S11	S12	S17	S5	S16	S4	S15	S3

Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Assignment	S14	S2	S13	S1	NL	NL	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	NP	F	F

F: Filament, NP : No Pin, NL : No Lead
S1~S19 : Anode, G1~G10 : Grid

ANODE GRID ASSIGNMENT



ANODE GRID ASSIGNMENT

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
S1	COMPU.REC	⌄	PBC	.	MHz	SURRAUND	P1	P1	P1	1
S2	P2	1d	3d	5d	7d	P2	P2	P2	P2	2
S3	D (LIVE)	1e	3e	5e	7e	P3	P3	P3	P3	3
S4	D (STAD)	2c	4c	6c	kHz	100	P4	P4	P4	4
S5	D (HALL)	2g	4g	6g	☽	D (VIVID)	P5	P5	P5	5
S6	REPEAT	⌄	3h	5h	MONO	D (MILD)	P6	P6	P6	6
S7	ONE	1f	3f	5f	7f	D (VOCAL)	P7	P7	P7	7
S8	ALL	2b	4b	6b	▷	D(NORMAL)			PROG.	8
S9	CONT	1b	3b	5b	7b	BASS			EDIT	9
S10	1	2a	4a	6a	ST	MUTE	320	1k 3.2k	10k	P10	10
S11	◔	1a	3a	5a	7a	MXP			A	11
S12	↻1	▷	AUTO	:	B NR	∿			B	12
S13	2	TRACK	RANDOM	INTRO	SLEEP	P13	P13	P13	TIME	13
S14	OFF	2d	4d	6d	☾	P14	P14	P14	♯	14
S15	↻2	2e	4e	6e	⧗	P15	P15	P15	♭	15
S16	3	⌃	4h	6h	WAKE UP	P15	P16	P16	LEVEL	16
S17	ON	1c	3c	5c	7c	P17	P17	P17		P17
S18	↻3	1g	3g	5g	7g	P19	P18	P18		
S19	REC	2f	4f	6f	◁	P19	P19	P19		

IC & TRANSISTOR VOLTAGES

- CD SECTION

IC101 CXA1782BQ (V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLAY	2.6	2.5	2.5	2.5	2.5	2.7	2.5	2.9	2.5	2.5	0.8	2.5	2.5	2.5	2.5
STOP	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.9	2.5	2.5	0.8	2.5	2.5	2.5	2.5
Pin No.	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
PLAY	2.5	1.2	5.0	5.0	5.0	4.9	4.8	0	5.0	5.0	0.6	0.7	1.5	2.4	2.5
STOP	2.5	1.2	5.0	5.0	5.0	4.9	4.8	0	5.0	0	2.2	4.3	3.1	1.2	2.5
Pin No.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**
PLAY	3.5	2.5	3.8	0.2	2.5	2.5	2.4	2.3	2.5	2.2	0	2.5	2.5	2.5	2.5
STOP	1.0	3.5	0.8	0	2.2	2.2	2.5	2.5	2.1	3.4	0	2.5	2.5	2.5	2.5
Pin No.	**46**	**47**	**48**												
PLAY	2.5	2.5	2.5												
STOP	2.5	2.5	2.5												

IC102 BA6398FP (V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLAY	4.2	4.2	2.5	2.5	8.2	5.0	4.8	0	2.5	2.4	4.6	4.1	0	2.4	2.5
STOP	4.2	0	2.5	2.5	9.3	5.0	4.8	0	2.5	2.5	4.6	4.6	0	9.0	2.5
Pin No.	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**		
PLAY	2.5	4.2	4.4	2.5	2.5	9.2	9.2	2.5	2.5	2.5	4.2	4.2	0		
STOP	2.5	4.6	4.6	2.5	2.5	9.2	9.2	2.5	2.5	0	4.6	4.6	0		

IC104 CXD2518 (V)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLAY	0	0	5.0	0	4.7	0	5.0	4.8	4.7	4.8	4.8	0	5.0	0	3.3
STOP	0	3.4	5.0	0	4.9	0	0	4.8	4.8	4.8	4.8	0	5.0	0	5.0
Pin No.	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
PLAY	5.0	5.0	5.0	5.0	0	0	0.5	5.0	5.0	2.6	0	5.0	0	2.5	2.5
STOP	5.0	5.0	5.0	0	0	0	5.0	0	0	2.5	0	0	0	2.5	2.5
Pin No.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**
PLAY	2.5	5.0	0	2.5	5.0	2.7	0.8	2.5	2.5	5.0	2.5	2.5	2.5	2.5	2.5
STOP	2.5	5.0	0	2.5	5.0	2.7	0.8	2.5	2.5	5.0	2.5	2.5	2.5	2.7	2.7
Pin No.	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
PLAY	2.0	2.4	0	5.0	1.7	5.0	2.5	1.7	0	5.0	4.5	0	0	2.6	1.7
STOP	2.0	2.4	5.0	5.0	1.7	0	2.5	0	5.0	0	4.3	3.6	0	2.6	2.1
Pin No.	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**
PLAY	1.7	0	0	2.5	0	0	0	0	2.5	2.5	5.0	2.5	2.5	2.5	0
STOP	2.1	2.1	2.1	2.5	4.8	4.8	0	5.0	2.5	2.5	5.0	5.0	2.5	2.5	0
Pin No.	**76**	**77**	**78**	**79**	**80**										
PLAY	0	2.5	2.5	0	0										
STOP	0	2.5	2.5	0	0										

IC106 NJM4558D (V)

Pin No.	1	2	3	4	5	6	7	8
PLAY	Fluc	Fluc	Fluc	0	Fluc	Fluc	Fluc	11.5
STOP	Fluc	Fluc	Fluc	0	Fluc	Fluc	Fluc	11.5

IC132 LB1641 (V)

Pin No.	1	2	3	4	5	6	7	8	9	10
STOP	0	0.5	0.8	0.8	5.0	1.8	11.7	11.7	0.7	0.5
OPEN	0	4.1	5.5	4.1	5.0	0	11.7	11.7	0.7	0
CLOSE	0	0	0.8	4.1	0	4.4	11.7	11.7	4.1	4.1

Fluc : Fluctuation

IC & TRANSISTOR VOLTAGES

PIN	Q1101			Q1102			Q1201			Q1202			Q1211		
	B	C	E	B	C	E	B	C	E	B	C	E	B	C	E
PLAY	4.5	1.8	3.7	5.0	5.0	4.2	9.7	5.0	9.1	5.0	1.2	4.7	0	0	4.6
STOP	1.4	1.3	0	5.0	1.3	5.0	9.1	5.0	7.8	5.0	4.9	0.7	0	4.4	0

PIN	Q1321			Q1371		
	B	C	E	B	C	E
PLAY	0	0	0.6	5.0	4.9	1.8
STOP	0	0	0.6	5.0	4.9	1.8

- FRONT SECTION

(V)

IC430 M38184

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CD : PLAY	0	3.8	5.2	0	0	4.9	0	5.2	0	0	0	0	5.4	5.4	0
CD : STOP	0	3.9	5.3	0	5.3	5.0	0	0	0	0	0	0	5.4	5.4	0
Pin No.	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
PLAY	0	0	5.4	0	0	5.4	5.4	0	2.7	4.9	0	5.3	1.8	2.7	0
STOP	0	0	5.4	0	0	5.4	5.4	0	2.7	0	0	5.3	1.8	2.7	0.9
Pin No.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**
PLAY	0	0	4.8	5.0	4.9	1.6	2.5	2.3	2.4	0	0	0	0	0	1.6
STOP	4.8	0.9	4.8	5.0	4.9	1.5	2.4	2.2	2.4	0	0	0	0	0	0
Pin No.	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
PLAY	1.5	1.3	0	4.9	4.9	0	0	0	0	0	2.1	Fluc	Fluc	Fluc	Fluc
STOP	0	0	1.5	4.9	4.9	0	0	0	0	0	1.9	Fluc	Fluc	Fluc	Fluc
Pin No.	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**
PLAY	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc
STOP	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc
Pin No.	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
PLAY	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	5.3	5.3	5.3	-27	5.3
STOP	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	Fluc	5.3	5.3	5.3	-33	5.3
Pin No.	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**					
PLAY	4.9	5.4	0	5.4	5.3	0	5.3	5.3	5.3	2.7					
STOP	4.9	5.4	0	5.4	5.3	0	5.3	5.3	5.3	2.7					

Fluc : Fluctuation

PIN	Q4230			Q4231			Q4232			Q4233		
	B	C	E	B	C	E	B	C	E	B	C	E
TAPE : PLAY	11.5	0	11.6	11.5	0	11.6	0	11.5	0	0	11.5	0
TAPE : STOP	11.5	0	11.6	11.5	0	11.6	0	11.5	0	0	11.5	0

PIN	Q4250			Q4260		
	B	C	E	B	C	E
POWER : OFF	0	4.8	0	5.0	4.9	5.0
POWER : ON	0	4.8	0	4.8	4.7	4.8

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